Forecast-Based Financing

Early Action Protocol
Hazard: Dzud[1]
Country: Mongolia

Name Organization: Mongolian Red Cross Society

Last update: November 23, 2020

[1] A zud or dzud is a Mongolian term for a severe winter in which large number of livestock die, primarily due to starvation due to being unable to graze, in other cases directly from the cold.

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Early Action Protocol Summary

Hazard	***Dzud*** *There are several forms of dzud, depending on their characteristics, contributing factors, and causes and according to the 286th resolution by the Mongolian government on assessing winter conditions, there's 5 different types of dzud:* *3.3.1. White dzud is when snow density reaches 0.25 gr/cm3 or more in any region and stays for 10 days or more and average monthly temperature is lower than annual average by 3.00C or more or (average quadratic curve is derived) and snow depth is more than 25cm in high mountainous or forest steppe areas, more than 22cm in steppe areas, more than 12 cm in dessert areas.* *3.3.2. Near white dzud is when snow blanket density is 0.20-0.24 gr/cm3 in any region and average snow depth is more than 16cm in high mountainous and forest steppe areas, more than 11cm in steppe areas, more than 5cm in dessert areas.* *3.3.3. Black dzud happens when summer conditions were harsh with no precipitation and vegetation, after the summer if there's no precipitation during winter for 10 days, monthly average temperature is colder than anomaly by 3.00C or more, the condition leads livestock to perish due to malnutrition, dehydration.* *3.3.4. Near black dzud is when summer conditions were harsh with no precipitation and vegetation, after the summer if there's low precipitation during winter for 10 days, monthly average temperature is colder than anomaly by 2.00C or more, the condition leads livestock to perish due to malnutrition, dehydration.* *3.3.5. Iron or ice dzud is when top layer or the core of the snow blanket is frozen to ice due to sudden climate change leaving the livestock unable to graze or the snow density is 0.35 gr/cm^3 or more.*
Potential high risk prone areas where the FbF mechanism could be activated	*While Dzud is experienced more frequently in certain regions of Mongolia, it is possible for any region to experience these conditions. As such the target area will be undefined prior to the trigger, which will indicate where high dzud risk is expected. The only geographic areas excluded are medium and large urban settlements, where inhabitants are not directly engaged in herding. The trigger for activation is: 20% of 3 or more provinces must be covered in red indicating the highest level of dzud risk. If the trigger indicates high dzud risk in areas larger than the program is able to support, short listing of soum[2]s to target will be based on the following criteria in order of priority:* *1. Area is not targeted by any other early warning early action support.* *2. Area is known to be particularly vulnerable due to other factors, such as poverty level, poor access to markets or veterinary services.*
Prioritized risks to be tackled by early actions	*Large-scale mortality of livestock from starvation, dehydration and cold exposure as a direct result of insufficient access to feeding, drinking, veterinary*

[2] Soum is the second level administrative sub-division below the Aimags (provinces). There are 331 soums in Mongolia.

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	care and animal shelter. This shock is typically followed by the following impacts to herders: 1. *No or low income rendering herder households unable to provide for their families' basic needs.* 2. *Psychological harm/trauma from the loss.* 3. *Increased household debt or loan defaults, impeding future credit possibilities.* 4. *Destitution migrations to the towns and capital city, in the extreme cases, when herders have no means to re-stalk and sustain themselves.*
Proposed Early Actions	*Cash grant to allow herders to stock hay and fodder;* *Distribution of veterinary kit*
Potential No. of household to be reached	*2,000 herder households*
Expected activation budget	*CHF 309,544*
Forecast sources of information	*Dzud Risk Map (for narrative information of dzud risk map on page 15, click here) to be published on each year in mid to late November and updated monthly for the remainder of the winter season, by the National Agency for Meteorology and Environmental Monitoring (NAMEM) which is jointly produced by the University of Nagoya (Japan). The outputs of the Dzud Risk Map that will be considered as the basis of the trigger are the seasonal map published in mid to late November and the December updated map.*
Expected lead time for activation	*Lead time is seasonal, giving a warning 3 months in advance of peak livestock death. Actions are triggered well in advance of animal deaths:* *Following a trigger based on the Dzud Risk Map, MRCS uses the following week to select target areas based on the trigger (Dzud Risk Map) to finalize the areas of operation approximately 7 days after the trigger. This involves consulting the relevant MRCS local offices to confirm their availability and willingness to implement immediately. The local branch immediately begins to prepare the beneficiary selection list with guidance from MRCS national level staff, to be finalized 4-week post-trigger. Cash is distributed within 2 weeks of the finalization of the list (42 days' post-trigger).* *Veterinary kits to be purchased and delivered to soum[3] level for pick-up on the same timeline as cash, with kits in-hand.*
Responsible focal point for this EAP	*Munguntuya Sharavnyambuu (MRCS Disaster Management Programme Manager)*
Governmental coordinating agency	• *Mongolian Red Cross Society is the primary implementer* • *National Agency for Meteorology and Environmental Monitoring (NAMEM) is the government agency coordinating trigger* • *National Emergency Management Authority (NEMA) is the government agency coordinating actions*

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List of Acronyms

IFRC: International Federation of Red Cross and Red Crescent Societies

APRO: Asia Pacific Regional Office

BRC: British Red Cross

MRCS: Mongolia Red Cross Society

RCMLB: Red Cross Mid-Level Branch

DMPM: Disaster Management Programme Manager

CC: Climate Centre

NAMEM: National Agency for Meteorology and Environmental Monitoring

IRIMHE: Information and Research Institute of Meteorology, Hydrology and Environment

NEMA: National Emergency Management Agency

MOFALI: Ministry of Food, Agriculture and Light Industry

LEMA: Local Emergency Management Agency

RCCC: Red Cross Red Crescent Climate Centre

NSO: National Statistics Office

DRM: Dzud Risk Map

MNT: Mongolian Tugrik (Currency)

DREF: Disaster Response Emergency Fund

EA: Emergency Appeal

OCAC: Organizational Capacity Assessment and Certification

BOCA: Branch Organizational Capacity Assessment

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CONTENT

Early Action Protocol Summary

1.	**Executive summary**	**7**
2.	**Key actors**	**7**
3.	**Risk Assessment**	**8**
3.1	**Hazard Selection Possibility of Drop-Down Menu or Check Boxes**	**9**
3.2	**Past Impact**	**12**
3.3	**Exposure Analysis**	**15**
3.4	**Vulnerability Analysis**	**19**
3.5	**Prioritized Impact**	**22**
4.	**Trigger Model (Impact Forecasting model)**	**22**
4.1	**Menu of Forecasts and selection of forecasts**	**22**
4.1. A	**Background information on menu of forecasts**	**23**
4.1. B	**Trigger model**	**25**
4.1. C	**Forecast basis for trigger**	**27**
4.2	**Exposure Map**	**29**
4.3	**Vulnerability Index**	**29**
4.4	**Definition of the Impact Level**	**30**
4.5	**Justification of the Impact Level**	**31**
4.6	**Intervention Map**	**32**
5.	**Selection of Actions**	**32**
5.1	**Prioritized impacts**	**32**
5.2	**Summary of selection process**	**32**
5.3	**Usefulness of actions in case of non-occurring event**	**34**
5.4	**Evidence Base**	**34**
5.5	**Beneficiary selection process and criteria**	**36**

IFRC Internal

5.6	**Feasibility**	**36**
6.	**Monitoring, Evaluation, Accountability and Learning**	**39**
6.1	**Monitoring the EAP implementation**	**39**
6.2	**Trigger Evaluation**	**39**
6.3	**Evaluation of impact of early actions after activation**	**39**
6.4	**Identification and Documentation of Lessons Learned**	**40**
7.	**National Society Early Action Capacity**	**40**
7.1	**HR and General Capacity**	**40**
7.2	**Thematic capacity**	**41**
7.3	**Strategies and plans**	**42**
7.4	**Financial capacity to advance funds**	**42**
8	**Finance and Logistics**	**42**
8.2	**Readiness cost**	**42**
8.3	**Activation cost**	**42**
8.4	**Prepositioning**	**42**
9	**EAP Activation Process**	**43**
9.1	**Preparatory measures**	**43**
9.2	**Communication protocol**	**43**
9.3	**Stop mechanism**	**43**
9.4	**Trigger activation system**	**43**
9.5	**Implementation process**	**43**
10.	**EAP endorsement**	**45**
11.	**Conclusion**	**45**
12.	**Annexes**	**46**

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1. Executive summary

The Forecast-based Financing plan for the Mongolian Red Cross Society is a tool to guide timely and effective implementation of early actions when certain weather or climate forecast shows a high likelihood of impacting people. If the event materialized and there are not preparedness actions in place, there is a high potential of humanitarian crisis. These crises could be avoided or minimized by the joint and timely action of the Government, communities at risk, stakeholders and the Mongolian Red Cross Society.

This plan has been designed and will be implemented by several organizations (Mongolian Red Cross Society, Respective Local Red Cross Branches, Local Governments, National Agency for Meteorology and Environment Monitoring and the National Emergency Management Agency). Everyone involved in this plan has a key role during the preparation and activation of the Forecast-based Financing mechanism.

Depending on the context, this document could be an essential component of contingency plans at National and Local level for the Mongolian government and the Mongolian Red Cross Society.

The Early Action Protocol (EAP) presented in this plan is the early action protocol for dzud which is triggered by a forecast provided by Information and Research Institute of Meteorology, Hydrology and Environment under NAMEM. This EAP provides step-by-step instructions for the selected actions to be implemented in a particular fashion and order, at the time it is activated. The EAP defines clearly: who takes what action when, where, and with what funds.

The EAP does not work in isolation. It is connected to already existing Disaster Risk Reduction and Management Plans and Contingency Plans. It ensures that early actions planned to be implemented in the window of time between the given forecast and the potential disaster event are carried out in a timely manner and successfully.

2. Key actors

MRCS – MRCS is the main actor for development and implementation of the EAP with support from following actors.

IFRC, APRO - The IFRC will provide support to ensure that there is an operational financial mechanism to enable the MRCS to access the funds within 6 to 12 hours of the activation of the EAP. IFRC, APRO will provide technical assistance and support to the MRCS in the areas of strategic relationships, early warning/early action, monitoring and evaluation, and financial accountability.

Climate Centre – Climate Centre is to provide MRCS with assistance for developing the EAP in which CC will be mainly focusing on the trigger mechanism and activation where valid scientific evidence is required.

NAMEM, IRIMHE – DRM is jointly developed by IRIMHE (an institute under NAMEM), Nagoya University of Japan and they have been publishing DRM since 2015. DRM is IRIMHE and MRCS have growing relationship since 2017 when MRCS implemented FbF project Mongolia with support from BRC.

NEMA: National Emergency Management Agency is a government agency which is the first responder to any kind of disaster in Mongolia and a legal coordinator of humanitarian assistance and

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intervention. MRCS and NEMA has been working closely in the fields of disaster risk reduction, response activities under the memorandum of understanding. NEMA will update MRCS with information from government-led assessment and also supports MRCS to distribute the items to soums. In some cases, NEMA provides its staff as police during distribution of items and encashment.

Local Municipality - Once the trigger is activated, an official letter signed with MRCS Secretary Generals signature will be send via email to responsible RC branches informing that the province or soum has been selected as target area from MRCS and respective provincial or soum-level governors will establish a working group with RCMLB and LEMA to select the beneficiaries according to the criteria. Local municipality will provide MRCS and its branches with beneficiary data. RCMLB and local municipalities, LEMA together are responsible for the beneficiary selection and its validation.

Red Cross Mid-Level Branch - Red Cross Mid-Level Branch is to implement the project on the ground according to the protocol under guidance from MRCS. The roles of RCMLB include beneficiary data collection, validation and animal care kit, cash certificate [4]distribution.

Khan Bank - Khan Bank is a financial service provider which has its branch in each soum across the country.

Food and Agriculture organization of United Nations – Mongolian Red Cross Society started working closely with FAO in October 2017 as both organizations were moving towards the same direction in terms of forecast based actions. Within the cooperation between MRCS and FAO, both organizations could share the technical knowledge, findings for effective operation and successful delivery of the assistance without any duplication.

3. Risk Assessment

Risk analysis for dzud includes analysis of historical impact data, vulnerability indicators and exposure indicators. To complete this analysis, a review of primary data from the different sources of information at the national level was conducted and secondary sources were also used.

Cash risk assessment was done using cash in emergencies toolkit (Table 1) which was used to identify the key risks and possible mitigation measures.

Table 1. Risk matrix

Risk	**Likelihood (1 Low-5 High)**	**Description of impact on programme (1 Low – 5 High)**	**Potential mitigation measures**
CONTEXTUAL risk: external to the organisation, little control			
Limited number of suppliers	1	5	• Additional supply chain from Russia could replace the local suppliers.

[4] Unconditional cash is transferred through bank accounts but cash certificates are distributed to the beneficiaries to increase visibility.

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Unavailability of the suppliers to provide goods in the quantity, quality required	1	5	• Additional supply chain from Russia could replace the local suppliers.
Robbery or theft of cash from beneficiary	1	5	• Extremely low chance of this happening due the money is transferred through bank and beneficiaries get their money in cash while volunteers and security is provided during the distribution. As herders live in rural area or soum have extremely low chance of getting robbed because everyone is most likely to know each other.
PROGRAMMATIC risk: aims and objectives failure, or causing harm through intervention			
Duplication of beneficiaries by other organizations providing assistance	2	**5**	• Mongolian Red Cross regularly participate in humanitarian country team meetings as a member and MRCS will coordinate with other agencies to avoid duplication.
Beneficiaries don't know the cash was transferred to their account	2	**4**	• Respective RC branch mobilizes its volunteers to work with local authorities (social worker, local governor) to inform the beneficiaries about the transfer or distribution beforehand.
Beneficiaries don't know who's providing the assistance	2	5	• Certificates are provided to the beneficiaries informing where the aid is given from and where to attend if there's any problem.
If respective RC branch has capacity to run cash distribution	1	4	• Within the implementation of the CTP, the RC branch has the following obligations: collect beneficiary information, monitor the cash distribution, inform the beneficiary of the assistance. Each MRCS branch has at least 1 officer trained in CTP and 15 trained volunteers thus all RC branches are capable to run the CTP.
Staff and volunteer safety during distribution	1	4	• Cash distributions are mostly organized at local bank or other facilities where security is provided. Plus, local emergency management agency is required to provide security.
INSTITUTIONAL risk (financial, reputational and strategic risk): internal to the organisation			
Accountability, fraud and corruption	2	4	• Hotline number established as complaint and feedback mechanism

3.1 Hazard Selection

Mongolia is vulnerable to a wide variety of natural hazards including floods, droughts, earthquakes, storms and other extreme weather events. Additionally, Mongolia experiences dzud which is unique

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to pastoral communities in Central and East Asia, and can be caused by a combination of summer drought, heavy snowfall, and high winds in concurrence with extremely low winter temperatures which combine to cause unsustainable conditions for animal survival. Mortality is caused by a combination of starvation because of being unable to graze and access fodder due to heavy snow, ice or drought, freezing due to extreme cold temperature, exposure to storms and wind, and a weakened immune system response due to exposure.

The official definition of dzud (or zud) according to the Mongolian government disaggregates between different types of dzud. According to the 286th resolution by the Mongolian government on assessing winter conditions, there are 3 types of dzud, with 2 types having a defined level of 'near' type condition.

- White dzud is when snow density reaches 0.25 gr/cm3 or more in any region and stays for 10 days or more and average monthly temperature is lower than annual average by 3.00C or more or (average quadratic curve is derived) and snow depth is more than 25cm in high mountainous or forest steppe Area, more than 22cm in steppe areas, more than 12 cm in dessert areas.
- Near white dzud is when snow blanket density is 0.20-0.24 gr/cm3 in any region and average snow depth is more than 16cm in high mountainous and forest steppe areas, more than 11cm in steppe areas, more than 5cm in dessert areas.
- Black dzud happens when summer conditions were harsh with no precipitation and vegetation, after the summer if there's no precipitation during winter for 10 days, monthly average temperature is colder than anomaly by 3.00C or more, the condition leads livestock to perish due to malnutrition, dehydration.
- Near black dzud is when summer conditions were harsh with no precipitation and vegetation, after the summer if there's low precipitation during winter for 10 days, monthly average temperature is colder than anomaly by 2.00C or more, the condition leads livestock to perish due to malnutrition, dehydration.
- Iron or ice dzud is when top layer or the core of the snow blanket is frozen to ice due to sudden climate change leaving the livestock unable to graze or the snow density is 0.35 gr/cm3 or more.

Table 2. Natural hazards between 2004-2016 in Mongolia.

As seen in the table №1 above, Mongolia has experienced various types of natural hazards and earthquake, heavy rain, flash floods, severe storms have occurred most. In the sense of frequency, 2004-2016, dzud happened 6 times averaging 0.5 times a year being the least frequently occurred among the others. However in the *table №3 (Economic losses caused by disasters on page 10)* below, it's seen that dzud in 2010 (highlighted in yellow) has caused more economic loss than all the other hazards Between 2004-2016 combined. 5 other occurrences than dzud in 2010 have been managed by Mongolian government itself but 2010 dzud was out of Mongolian governments control that the government officially announced it as national emergency situation. For the 2010 dzud event, a total of 38.1 million USD was donated to the herder population by IFRC, UN agencies, Asian Development Bank, World national institutions in forms of hay and fodder, carcass removal, transportation, food, medicine and other health supplies Bank, USAID, SIDA, Governments of Russian Federation, People's Republic of China, Japan and Turkey[5]. MRCS has chosen dzud or

[5] World Bank Study on Structuring Dzud Disaster Preparation, Financing and Response to Increase Resilience of Herder Households to Climatic Risk, Tungalag Lailan, 2011.

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extreme winter conditions to take early actions against because its impact on the lives and livelihoods is much higher than other types of hazards which occur in Mongolia and dzud impact is more clearly described in the past impact section on page 10.

Types of natural hazards	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Total	Annual Average
Severe storm	16	32	15	26	37	25	21	14	23	22	56	287	26
Heavy rain and flood	10	14	18	34	52	32	20	21	17	74	35	327	30
Dzud	1	1	1	-	-	-	-	1	1	1	1	7	1
Earthquake		31	39	22	49	61	54	59	286	32	39	672	67

Table 2. Number of occurrences of natural hazards in 2009-2019 in Mongolia.

What made the dzud in 2010 so dreadful is consecutive sudden incidents of heavy snowfalls, low temperatures and winter storms, preceded by drought and pasture overgrazing occurred during 2009-2010
Winter have caused a mass death of livestock in 95 soums of 17 provinces. The 2010 dzud resulted in the death of approximately 10.3 million livestock or 20 percent of the 2009 national herd. 770'000 people were affected of which 43'500 herders were left without a single animal, 164'000 lost more than half of their livestock.

The mass death of livestock significantly affects the herders' daily lives. In 2010 dzud, many people lost their means of transportation, which prevented them from moving away from the affected areas. Those who could move from their normal grazing areas placed an additional burden on areas not directly affected by the dzud. Overgrazing in these areas increased the geographical extent of the impacts of dzud. Herders also faced an insufficient supply of heating materials (manure), food and cash income, which negatively affected their health.

There are *223'761 herder families* [6] in Mongolia whose lives and livelihoods are completely dependent on livestock as their only source for income and food is livestock production which contributes more than 10 percent of the country's GDP.

[6] http://www.1212.mn/tables.aspx?tbl_id=DT_NSO_1001_044V1&13999001_select_all=1&13999001SingleSelect=&SOUM_select_all=0&SOUMSingleSelect=_0&YearY_select_all=0&YearYSingleSelect=_2016&viewtype=table

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Types of natural hazards	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Total	Annual Average
Severe storm	3476.8	1195.3	230.7	2700.5	280.4	700.4	587.4	5263.2	128.9	2797.4	**17361**	**3157**
Heavy rain and flood	16.9	4201	744.9	55.8	98.2	3107.5	755.4	323.9	4028	897.8	**14229.4**	**2587**
Thunderstorm	477.5	13.3	-	3.8	60.5	125.8	15.9	19.6	23.9	-	**740.3**	**165**
Dzud	9730.3	6466.5	**526079**	-	-	-	-	-	18187.4	8300	**568763.2**	**189588**
Earthquake	-	-	-	-	-	-	-	-	-	-	**0**	**0**

Table 3. The economic loss caused by natural hazards between 2008-2017 (Millions.MNT)[7]

3.2 Past Impact

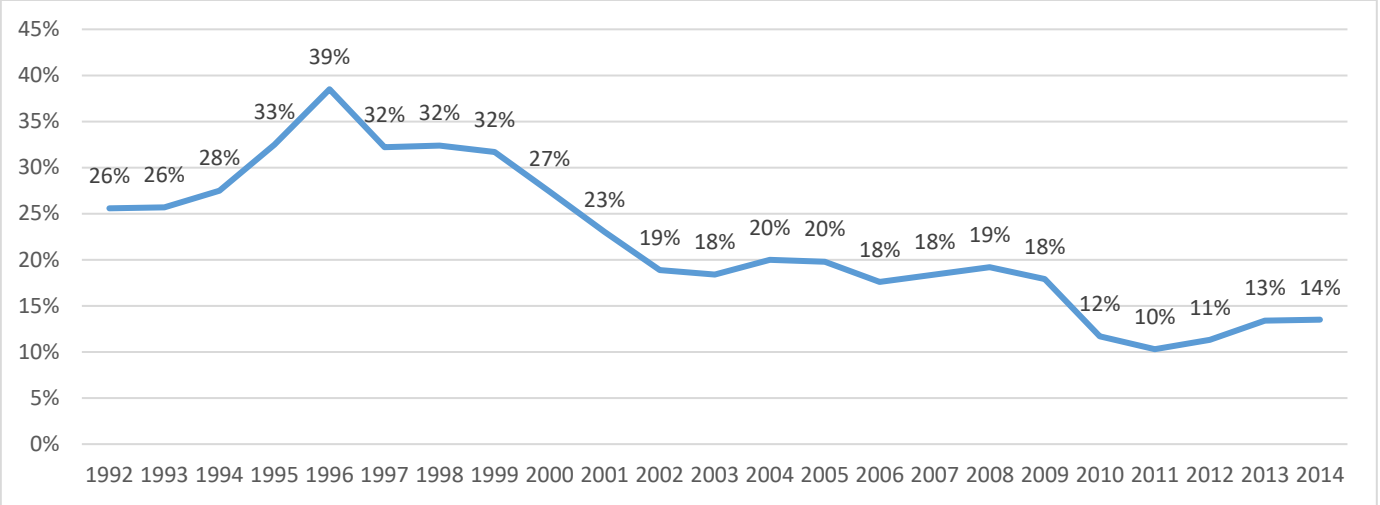
The agricultural sector is the vital to Mongolian economy as it has 61.5 million livestock which contributes almost 10% of the Mongolian GDP as of 2018. For centuries pastoral livestock production was the only livelihood basis for Mongolia. Although the last century brought industrialization and development of other productive industry and services, agriculture is still a major sector of Mongolian economy. 8 Because of Mongolia's harsh climate, most cultivations aren't suitable for Mongolia and only 1% of the arable land in Mongolia is cultivated with crops, amounting 1.3 million hectares (NSO). The agricultural sector, therefore, remains heavily focused on nomadic animal husbandry with 75% of the land allocated to pasture. Today, livestock provides the direct of basis of livelihood for about one fourth of Mongolia's population and the rural dwellers make a living by herding horses, camels, goats, cattle and sheep for milk, cashmere, meat and other livestock products, which is the only source of income for them. Nomadic pastoralism in this semi-arid country is a risky that is severely dependent on extreme weather and climatic conditions throughout a year starting with arid summers and continuing with severe freezing winters such as dzud. In 1999–2000, 2000–2001 and 2001–2002, Mongolia was hit by three dzuds in a row, in which a combined number of 11 million livestock (25% of the national herd) perished9. This period also coincided with severe and extensive summer droughts and more than 12 thousand herders' families lost their entire herds, while thousands more were pushed to subsistence levels below the poverty line by their loss of animals. The government's disaster relief funding for a disaster of this magnitude was inadequate to meet the urgent demands of the affected population and the government requested international relief assistance in February 2000. Massive death of livestock not only affected the herders' livelihood but also caused severe socioeconomic damage to the whole country. Many herders migrated from rural to urban areas, reversing the trend of net urban to rural migration of the 1990s and raising the urban population of Mongolia from just under 50% in 1999 to over 57%. Unemployment and poverty rose in the urban areas, Gross agricultural output in 2003 was 40% below the 1999 level and its contribution to national gross domestic product decreased from 38 to 20% (NSO).

In 2009-2010, 10.3 million livestock died which was over 20% of the total livestock in the country (1-2% loss of the total livestock in the country is considered as normal death rate by MOFALI). In the figure below, the significant drops in 1999-2002 and 2009-2010 make it clear how a mass loss of livestock directly affects national economy.

Figure 1. Share of Livestock Sector in GDP[10]

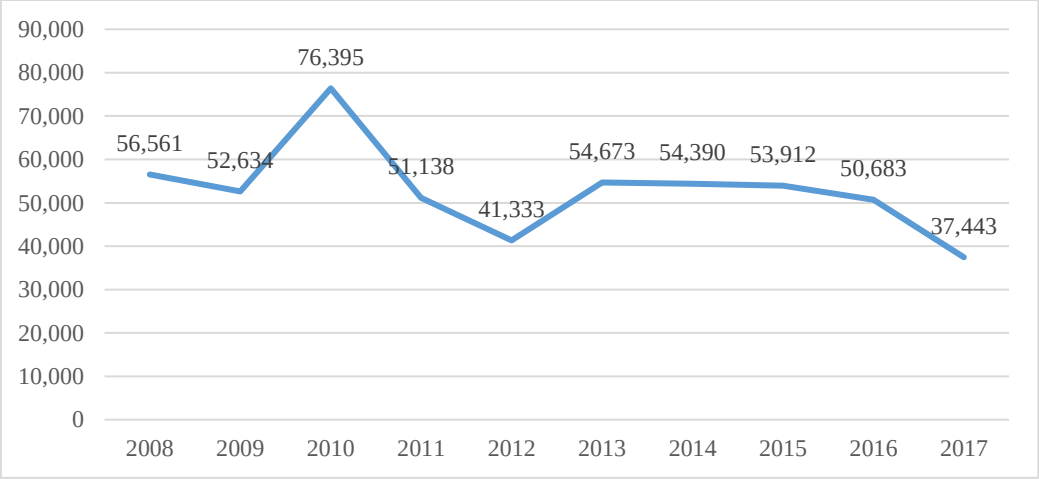
[7] http://www.1212.mn/tables.aspx?TBL_ID=DT_NSO_2400_012V1
[8] http://documents.worldbank.org/curated/en/357411468313530800/pdf/wps4396.pdf
[9] https://mongolianobserver.mn/what-is-dzud/
[10] http://www.fao.org/fileadmin/templates/ess/documents/apcas26/presentations/APCAS-16-6.3.5_-_Mongolia_-_Livestock_Statistics_in_Mongolia.pdf

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Having lost their only source for living, the herders are forced to seek alternate employment and usually migrate to Ulaanbaatar with a population of more than 1.3 million, is surrounded by ger districts [11] with clusters of unauthorized gers[12] and wooden houses without roads, water or sewage systems. Knowing nothing but herding and lacking in education, many displaced herders fail to find jobs and fall into extreme poverty, alcoholism and crime. Others risk their lives in dangerous illegal mining jobs. In the Figure 2, it's seen how the 2010 dzud has increased migration to Ulaanbaatar[13] significantly.

Figure 2. Population migrated to Ulaanbaatar city from provinces in 2008-2017[14]



The herder families experience tremendous psychological suffering as when they wake up to find out all the animals they've been herding for a lifetime are frozen to death over single night. In the dzud 2010, there have been incidents in which the desperate herders who were left without a single animal

[11] A ger district is a form of residential district in Mongolian settlements
[12] A ger is a portable, round tent covered with skins or felt and used as a dwelling by nomads in the steppes of Central Asia.
[13] Ulaanbaatar city (UB) is the capital city of Mongolia
[14] http://www.1212.mn/tables.aspx?tbl_id=DT_NSO_0300_040V1&13999001_select_all=0&13999001SingleSelect=_T2&SOUM_select_all=0&SOUMSingleSelect=_0&YearY_select_all=0&YearYSingleSelect=_2017_2016_2015_2014_2013_2012_2011_2010_2009_2008&viewtype=columnchart

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committed suicides as losing their livelihood over a night. In the Figure 3, the suicide rate has increased significantly in 2010.

Figure 3. Suicide rate in 2009-2017[15]

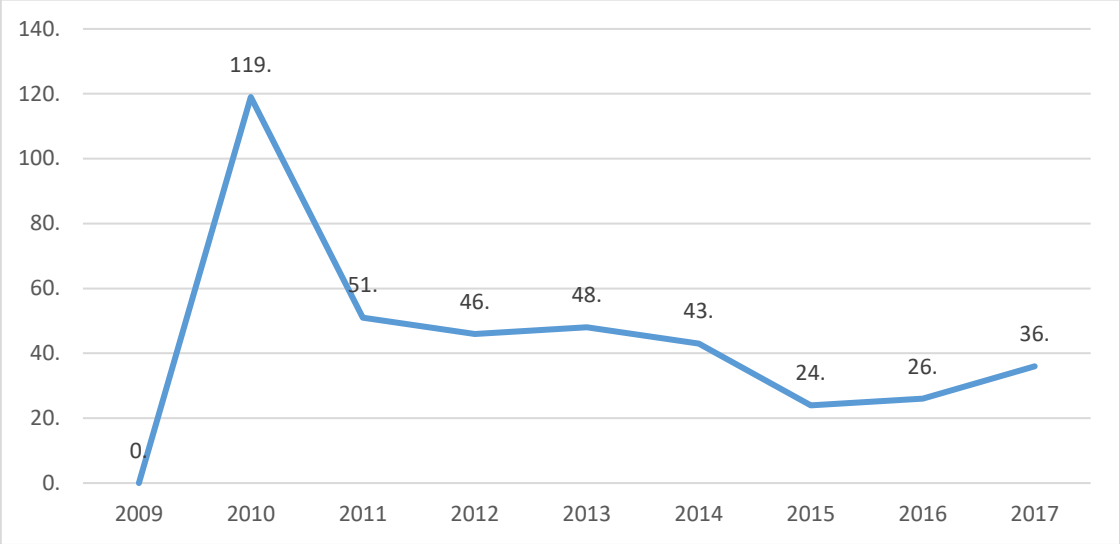
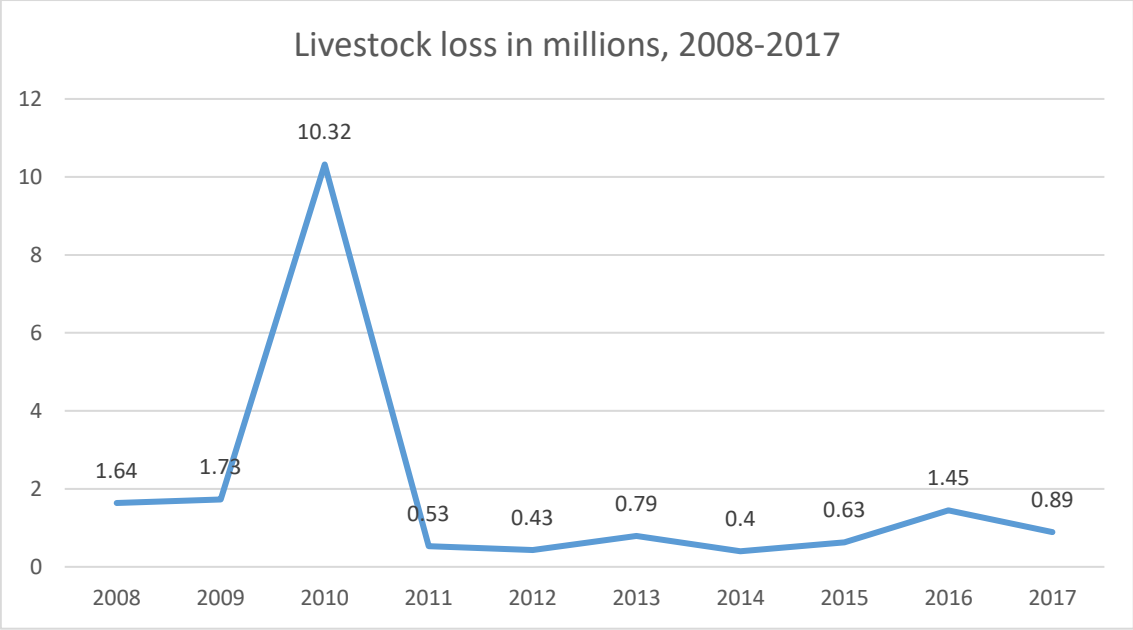


Figure 4. Livestock mortality in 2008-2017.



16

[15] http://www.1212.mn/tables.aspx?tbl_id=DT_NSO_2300_002V2&CR005_select_all=0&CR005SingleSelect=_1010103&YearY_select_all=0&YearYSingleSelect=_2017_2016_2015_2014_2013_2012_2011_2010&viewtype=barchart

[16] http://www.1212.mn/tables.aspx?TBL_ID=DT_NSO_1001_011V1

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3.3 Exposure Analysis

Based on our historical impact analysis, the elements most exposed to extreme cold and snowfall events are the herder population and their livelihoods, mainly their livestock.

According to vulnerability analysis, the population most exposed to the dzud is the herder population who have up to 400 livestock. The previous threshold for the beneficiaries indicated that the beneficiary herder household must have had 50-200 livestock but after rigorous discussion and study, it was changed to up to 400 livestock. It's seen in the below table that most herders have 200-500 livestock and to identify true herders (not idle herders[17]) and reduce the risk of idle herders are engaged in the program, the threshold was lifted to 400, this way the idle herders who usually have small herd will be excluded. With the previous criteria of 50-200 livestock, the true herders who have livestock more than 200 were excluded when they really needed the assistance, with the current update, it will make our targeting more accurate therefore the program more efficient and effective.

Number of livestock owned	Number of households at national level
Up to 11 livestock	12,761
Up to 11-30 livestock	18,888
Up to 31-50 livestock	14,868
Up to 51-100 livestock	27,895
Up to 101-200 livestock	45,975
Up to 201-500 livestock	67,545
Up to 501-999 livestock	33,043
Up to 1000-1499 livestock	10,004
Up to 1500-2000 livestock	1,602
More than 2001 livestock	736

[17] Idle herders are people who legally own livestock but doesn't make living out of livestock production, usually let other people herd their livestock.

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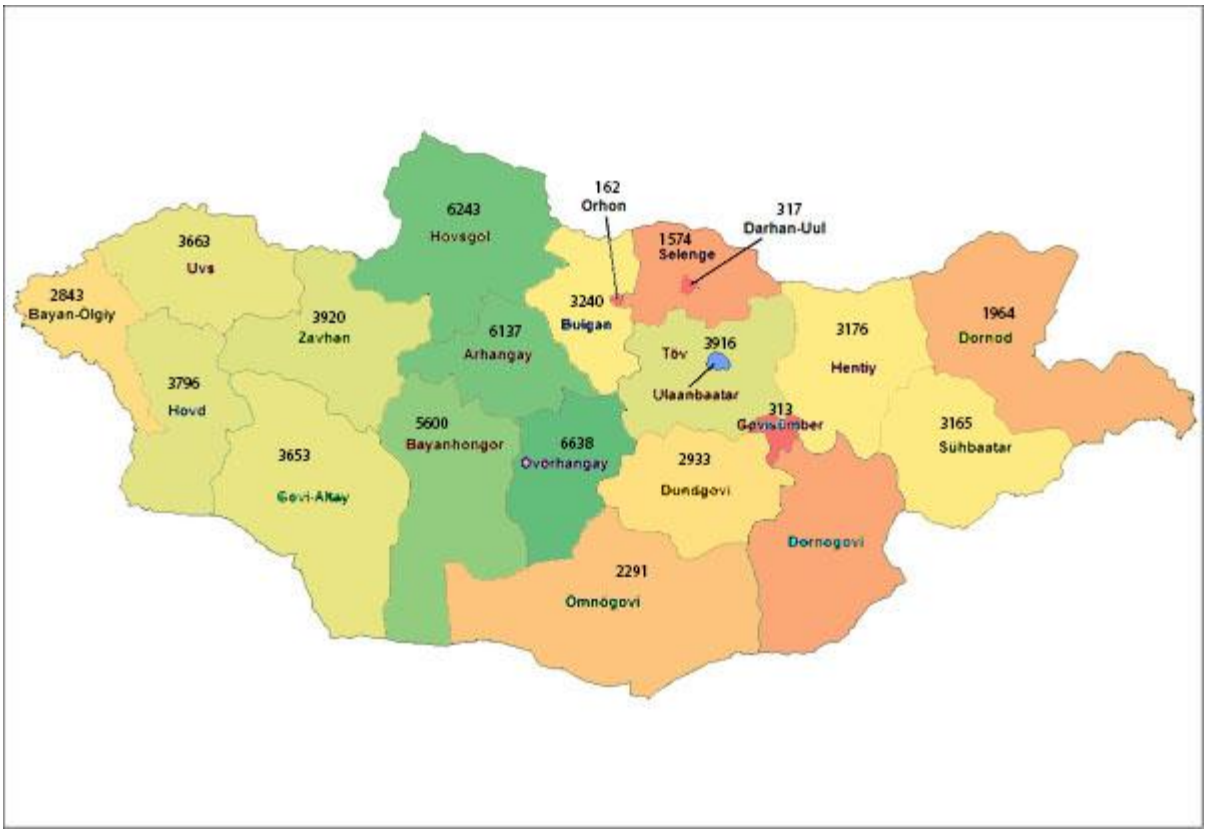


Figure 5. Herder population with up to 400 livestock. NSO.

It's observed that all livestock (cattle, horse, goat, sheep) are exposed to extreme cold and snowfall considering morbidity and mortality rates increase dramatically in years with extreme weather events but it's shown in the figures below small animals (goat, sheep) are more vulnerable to extreme cold.

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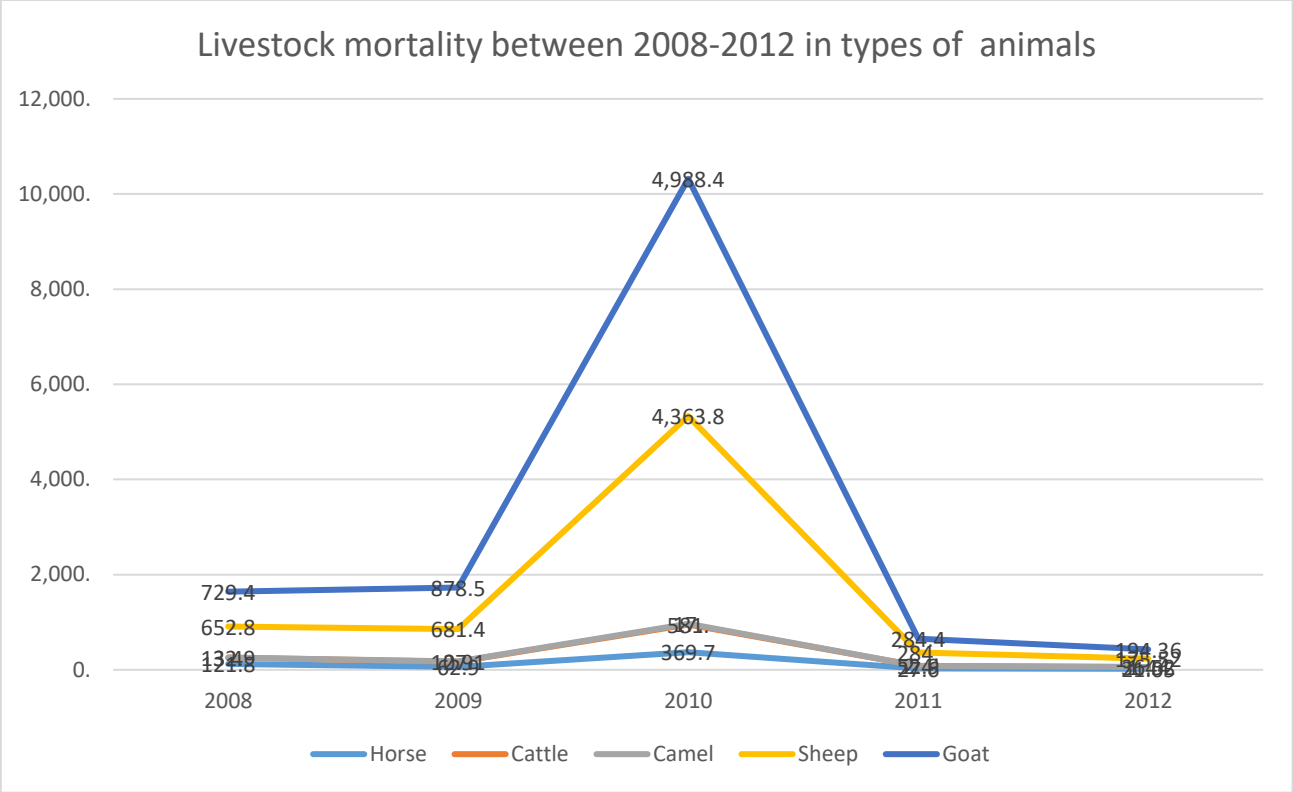


Figure 6.NSO

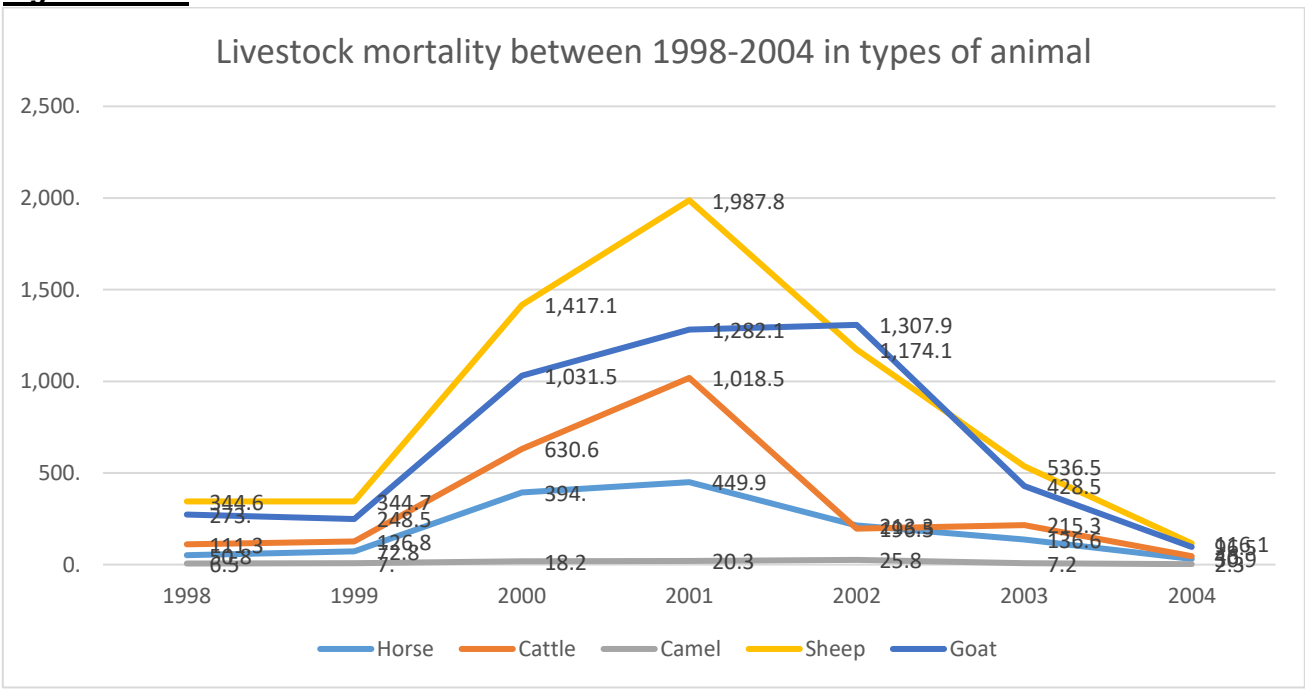


Figure 7.NSO

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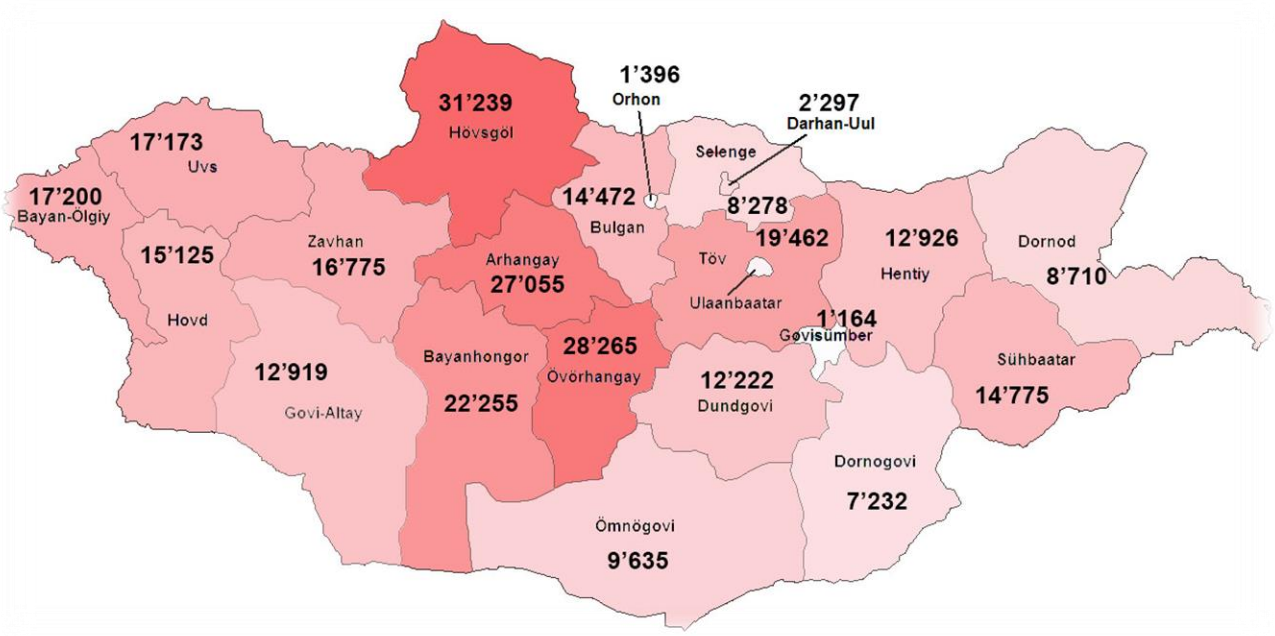


Figure 8. Herder population in provinces. 2017

According to National Statistics Office, in total of 303'590 herders are tending 66 million livestock across the country[18].

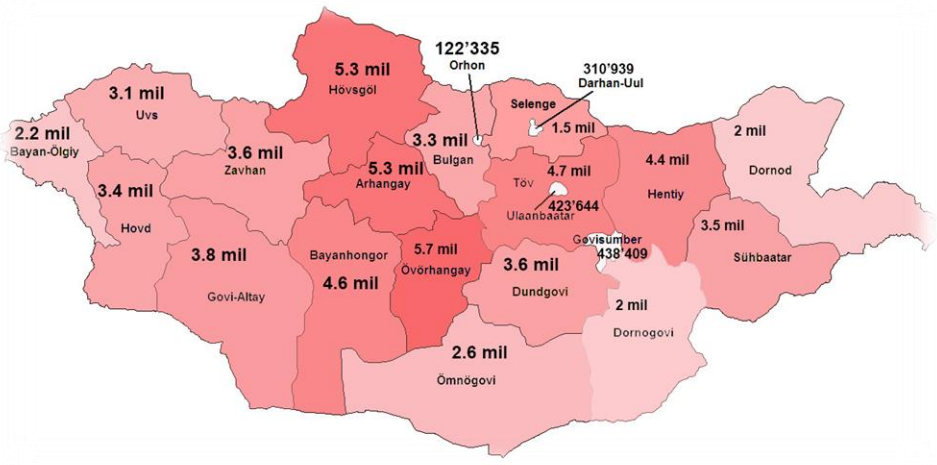


Figure 9. Number of livestock in provinces. 2017

[18] http://www.1212.mn/tables.aspx?tbl_id=DT_NSO_1001_021V1&BAG_select_all=0&BAGSingleSelect=_181_182_183_184_185_261_262_263_264_265_267_341_342_343_344_345_346_348_421_422_423_0&TYPE_OF_LIVESTOCK_select_all=0&TYPE_OF_LIVESTOCKSingleSelect=_01&YearY_select_all=0&YearYSingleSelect=_2017&viewtype=table

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3.4 Vulnerability Analysis

All herding areas of Mongolia have some level of dzud risk, although the frequency regions experience dzud conditions varies. Further, the vulnerability of livestock varies by region, as different regions keep different types of animals (e.g. camels in the south) and differing breeds of all animals (camels, goats, horses, cows) which have breed-specific vulnerabilities to winter conditions. The northern regions have tended to experience more frequent dzud conditions, although the southern desert region can experience impacts severely due to herders being especially remote, living in very low density, and further from access to hay from Russia. There are multiple categories of dzud, which are each unique combination of ice and snow that prevent animals from grazing for long periods, very cold temperatures reaching as low as -48 C, under which the animals use all their energy to keep themselves warm, and pre-winter season environmental conditions that limit fattening of animals and hay preparation, such as above average levels of dryness. In all scenarios the animals waste and die of starvation, dehydration or cold-exposure. The vulnerability of the herder household could vary depending on their residential region as herders in steppe regions are mostly exposed to heavy snow and blizzard due to their less access to resources to build winter shelter and barn meanwhile herders in taiga or forest steppe-mountains have to struggle with heavy snow, extreme cold from Siberian high. In desert, the herders are usually unavailable to reserve hay and fodder for their livestock or dairy products for themselves. Most importantly, in drought years, livestock are unable to build up the necessary strength or biomass during the summer and autumn that is necessary to cope with the harsh, cold winter and spring, making them more vulnerable to mortality in those months.

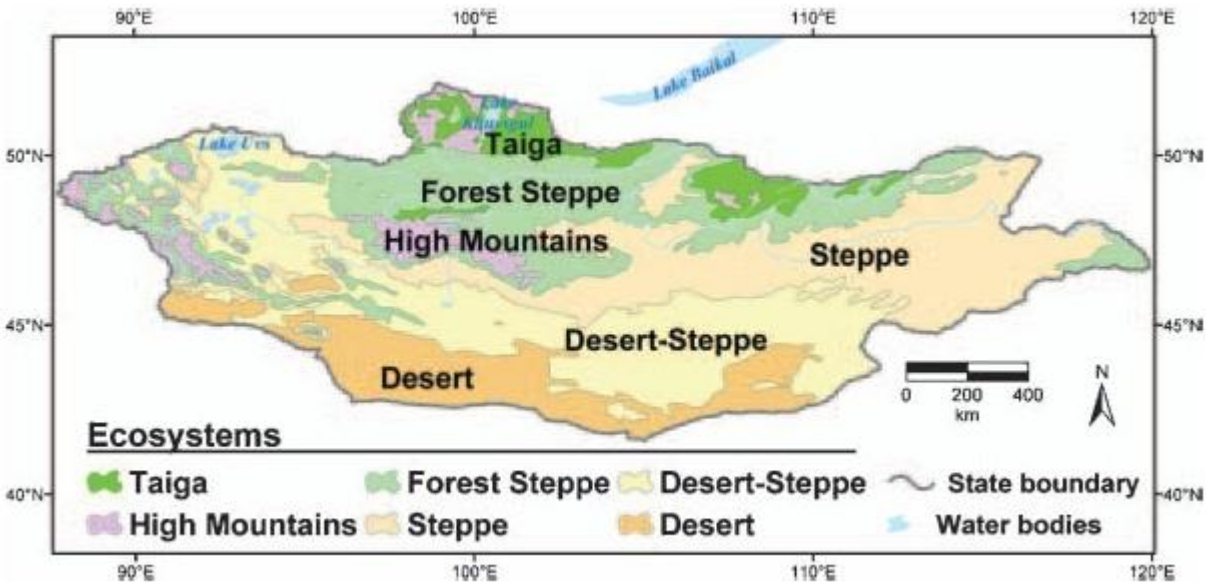


Figure 10. Ecosystems map of Mongolia.

Beside the climatic vulnerabilities, the socio-economic factors contribute greatly to the vulnerability of the herder households against dzud. The table below will explore main socio-economic vulnerability indicators among the herders and what indicators MRCS will use to select the beneficiaries.

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Table 4. Socio-economic vulnerabilities of herders.

Category	Vulnerability	Why	If used as criteria to select beneficiary
Herders and livestock	Having more than 5 children under age of 16	-The herders have more expenses as their children go to school. -In most cases, as their children go to soum for school, one of the parents has to go with their children and other one will stay to tend their livestock alone. -In other cases, the children will live in the dormitory by themselves and are likely to experience more stress.	Yes
Herder and livestock	The household has disabled family member	-the herder is most likely to experience more stress; -in most cases, disabled member requires constant tendency from others.	Yes
Herders and livestock	Single-parenting more than 3 children under 16	-the herder is most likely to experience more stress; -in most cases, single-parented households lack in manpower and resources to prepare for winter.	Yes
Herders and livestock	Being elder herder who herd livestock by himself	-in most cases, a single elderly herder lacks in manpower and resources to prepare for winter.	Yes
Herders and livestock	Having up to 400 livestock	-the herders who have more than 400 livestock are considered to have more availability to recover from dzud damage as there's more chance they will have animals left after the dzud	Yes
Herders and livestock	Having pregnant or lactating woman in family	Due to their higher nutritional needs and detrimental effects of poor nutrition on the health of the mothers and their children.	Yes
Facility	Having no winter shelter or barn	-the livestock are directly exposed to severe cold or blizzard, heavy snow without winter shelter or barn.	Not used as criteria because most herders have somehow winter shelters.

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Forage	Insufficient reservation of hay and fodder	-in order to survive the extreme cold, the livestock must consume certain amount of nutrition, if the household was not available to reserve enough hay and fodder, their herd is directly exposed.	Not used as criteria because in most cases, it's impossible to prepare sufficient hay and fodder for the whole herd due to the manpower of an average household.
Other	Being remote	-if the herder household is located in remote area from soum or province center, they will be more exposed to dzud as there's a risk of the roads being blocked by snow, communications failure leading to shortage of essential needs such as food, medicine.	Not used as criteria because herders are available to switch locations anytime.
Facilities	Having no vehicle or means of transportation	-In times of emergency such as heavy snow, blizzard or extreme cold, the herders are unavailable to evacuate from the affected areas due to lack of transportation means.	Not used as criteria because most herders don't have vehicle.
Facilities	Having no means of communication	-the herders are unavailable to contact emergency service or receive forecast and early warnings.	Not used as criteria because most herders have phones.
Facilities	Having no wells	-if the livestock has no source for water, dehydration could be the main reason for livestock health condition to deteriorate.	Not used as criteria because herders mostly migrate to areas with wells during winter.
Economy	Having loan	-the herder households with loans are most likely to experience more stress; -the herder households with loans experience more financial difficulties including not being able to pay for hay and fodder once the livestock is exhausted;	Not used as criteria because of a linear relationship with having many children or disabled member.

Supporting herder populations experiencing dzud is challenging. Many herders live in remote areas which are difficult to access once the winter season has onset. Typically, once dzud is confirmed, based on observed winter weather conditions and reports of large-scale animal deaths, it is often too late to take action to save the animals. Providing emergency feeding and veterinary care in the capacity of a humanitarian response may make little demonstrable difference, as once the animals enter a highly weakened state from starvation, they are no longer able to digest emergency fodder

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or hay. As such, if supports are to be provided to help herders save their animals, and therefore their livelihoods, it would be far more impactful to provide that support during the 1-3 months' period before peak time of animal deaths, rather than in response to it. This is the fundamental motivation for acting early through an FbA program. According to the findings from the impact analysis for FbA project MRCS implemented with BRC in 2017-2018 winter, the research organization compared 223 FbA benefitted household and 223 non-benefitted households from 4 provinces, (it should be noted that both groups of households had similar characteristics such as number of household members, number of livestock, age of the household head etc.) With support of FbA project, the households were able save adult animal and offspring worth of 306'700 tugriks[19] or 128 USD, for more information, please go to evidence base section on page 28. The forecast-based action by the disaster relief emergency fund was activated in 2019-2020 winter and MRCS assisted 1,000 vulnerable herder households before the dzud impact. The operation was successful, and the cost-benefit analysis is currently being conducted as of September 21, 2020.

3.5 Prioritized Impact

As mentioned before, dzud has direct affection to the livelihoods of the herder families as herder households lose their only source for food and income when their herd is perished due to starvation and low temperature. The herders who lost their livelihood also experiences great psychosocial trauma and the herders left with no source for living are forced to move to the city to look for an alternative employment. The former herders usually settle unofficially in the outskirts of city where the poverty and unemployment along with other socio-economic hardships await.

Considering the risk factors, estimated lead-time and the capacity of Mongolian Red Cross Society, MRCS will be focusing on the livelihoods of the herder families in FbA project. As livestock mortality is the most prioritized impact affecting the livelihoods of the herder households, MRCS aims to reduce the livestock mortality among the herder households who reside in areas at high-risk of dzud indicated by DRM. Vulnerable communities are identified according to the vulnerability criteria will be selected with the relative Red Cross branch, Local emergency management agency and the communities' legal representative. Vulnerability criteria includes the following:

- Household must be an active herder household (who herd livestock by themselves) and have up to 400 livestock.

And meet at least one of the following criteria:

- Be single headed household with 3 or more children under 16;
- Household with disabled member;
- Household with lactating or pregnant woman;
- Senior herder (older than 60) who herd his livestock by himself;
- Household with 5 or more children under 16. For the rationale of the selecting criteria, go to Vulnerability Analysis section on page 14 or please, click here.

4.1 Menu of Forecasts and selection of forecasts

[19] Mongolian currency

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Table 5. Menu of Forecasts

Forecast Variable	Sources	Forecast frequency + lead time	Spatial Resolution	Forecast Skill	Forecast notes
Risk of Dzud impact	NAMEM/University of Nagoya	First produced in late November on a 3 months lead time (in regards to impact), then updated every 10 days. The target period remains consistent (forecasting for the same period regardless of the updates). Therefore, the lead time changes (decreases) with each subsequent update.	Sub-district level - soum	Exact skill score is unknown but perceived to be sufficient. A preliminary skill analysis has been completed which confirmed expected trends between map outputs and observed livestock mortality	It is unknown if there has been a quantitative assessment of skill. However, qualitative assessments have been done and the skill seems to be sufficient for the use case of early action
Snow Forecast	NAMEM	Updated daily and informs the forecast of coming week	Sub-district level - Soum	Unknown, but perceived to be sufficient	
Temperature forecast	NAMEM	Updated daily and informs the forecast of coming week	Sub-district level - Soum	Unknown, but perceived to be sufficient	
Cold Season Outlook	NAMEM	Updated monthly and informs the forecast of coming month and outlook for season.	Sub-district level - Soum	Unknown, but perceived to be sufficient	

4.1A Background information on menu of forecasts

During the pilot year of the FbF program (winter 2017/2018), the program triggered using a pre-existing product – the Dzud Risk Map (DRM) – produced by NAMEM in collaboration with Nagoya University. The Dzud Risk Map was, and continues to be, an exciting new product which enabled the first impact-based FbF trigger. Using GIS based Multi-criteria decision analysis (MCDA), the criteria are determined and the parameters (see list of DRM parameters), ranking, numerating method is standardized. The weight of each parameter is also determined through MCDA, weighted layers are overlaid through GIS system. (see DRM in 2017) Dzud risk map classify risk levels into 5 categories (least, low, medium, high, very high).

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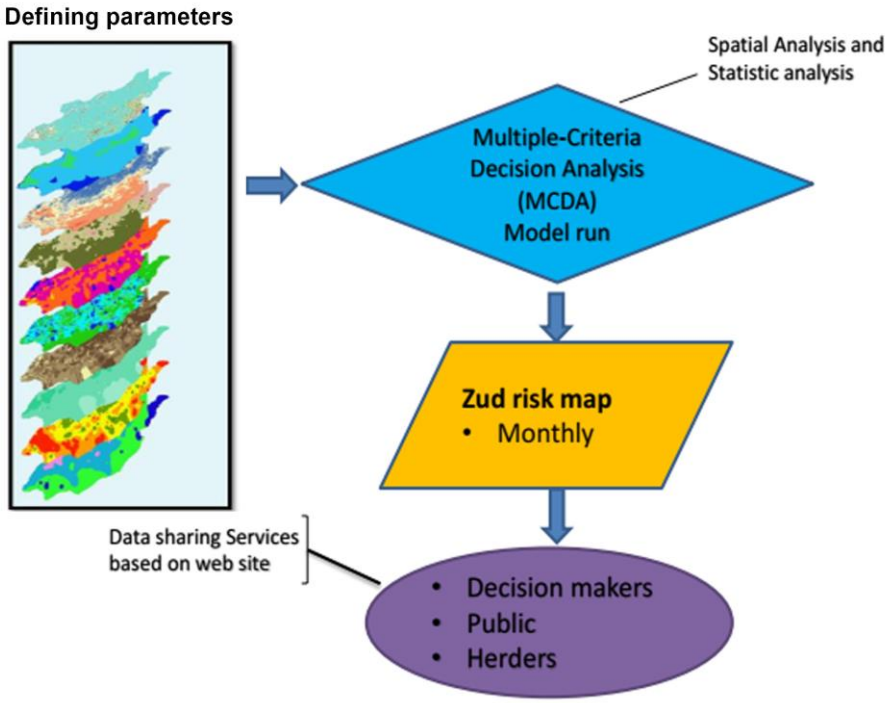


Figure 11.Dzud risk map diagram

Table 6. Defining parameters of dzud risk map.

№	Parameters/Layers	Rank	Numerator	Weights	0-100 scale
1	Summer condition	3	9	0.09	9
2	Pasture carrying capacity	2	10	0.10	10
3	Livestock number	3	9	0.09	9
4	Biomass/1500 site	2	10	0.10	10
5	Anomalous precipitation	5	7	0.07	7
6	Anomalous temperature	5	7	0.07	7
7	Drought index/MODIS	4	8	0.08	8
8	Snow depth	1	11	0.11	11
9	Snow cover/MODIS	3	9	0.09	9
10	Air temperature forecast	2	10	0.10	10
11	Precipitation forecast	1	11	0.11	11
			101	1.00	100

It was first produced for the 2015/2016 winter season and as such, has provided warnings for the last three years. With so few years of the product's output to analyze, there are a number of factors of interest to the design of an FbF trigger that are difficult to assess, such as the ability to estimate the frequency it might trigger, the false alarm rate and so forth. For the pilot year, it was decided to go ahead with the Dzud Risk Map as the basis for the trigger and then spend the following year doing a deeper assessment of the product itself.

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One learning that has come out of the additional assessment is that the presence of any red on the map indicating 'very high risk', which was the basis for the 2017/2018 trigger, will not sufficiently differentiate the expected extreme years from milder years, during which national level resources such as government hay reserves can reasonably be expected to cover risk levels. Using the 2017/2018 trigger would mean the program would trigger too frequently and would not fulfill its intended purpose, which is to initiate early action in anticipation of winter conditions that will produce substantial livestock deaths (10% or more) well above the natural die-off rate (6% at soum level). These rates represent averages among the herder population, with vulnerable herders typically having far higher rates of mortality. Indeed, in 2010 the mortality rate was more than 50% for many vulnerable herders, with some herders losing 100% of their stock.

The DRM highlights areas of red (very high risk of more than 10% of livestock mortality) at soum level. This makes a great deal of sense for certain decision makers, such as herders deciding if and to where they should move or split their herds, or government agencies maintaining hay reserves. However, heightened risk in isolated areas should not over stretch national capacity to cope, and does not represent a risk level suitable to activate. As FbA by DREF is intended to be activated only for extreme conditions beyond the coping capacity of the affected population, there is a need further quantify risk levels to trigger based on larger portions of the herding population at very high risk of above average livestock loss. In particular, the trigger seeks to indicate provinces with a 'high density of risk', or where a significant portion of the province is covered by a high level of risk. This would identify provinces with the largest percentage of total area where conditions would be beyond the capacity of herders to cope with (too far to migrate, split herds etc.) and beyond the capacity of provincial level authorities to support vulnerable herders. High density risk is integrated into the trigger by calculating the portion of a province at very high risk.

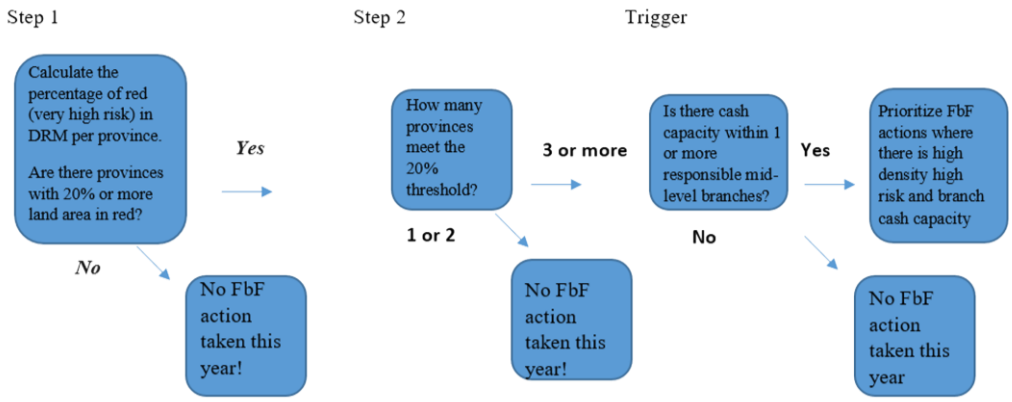
4.1B Trigger Model

The selected method to identify if the upcoming winter period will be one with very high risk at high densities is to calculate the percentage of land area in each province that the DRM indicates is at "very high risk" of dzud. When the DRM is released, MRCS will run additional calculations with the technical support from the Climate Centre. This role can be absorbed into the Climate Centre's general unfunded support to national societies, with the view to eventually have the analysis automated. Those calculations will produce a chart that indicates the percent of each province that appears as red within the DRM (see figure below). The threshold for an area to be considered eligible for early action support will be calculated at the province level. At the province level, if 20% or greater of the province land area is indicated to be at very high risk from the DRM, that province will be noted to be at high density risk for impact.

A trigger occurs when three or more provinces reach this high-density threshold when the map is released in November, or when it is updated during the month of December. Either map is suitable as the basis for initiating an FbA by DREF. The triggering model identifies which provinces and soums to provide early action support. Vulnerability criteria, discussed on page 27, is then used to identify herder households within the targeted soums. We are proposing for more flexible conditions for close date of the trigger. In the last activation, the risk map was published 2 days later than the close date but after discussions with the IFRC operations coordinator, we were able to activate. Our proposal for close date is January 15th. This date is proposed after calculating if the early actions could be taken before the peak livestock mortality.

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Name of province	% land area <u>red</u> in DRM	20% threshold reached?	Name of mid-level MRCS branch responsible	Names of affected (red) soums
1. Example name	X %	Yes or No	Example name	Example names
2.				
3.				
Etc				



<u>Figure 12. Trigger model diagram.</u>



<u>Figure 13.Map of Mongolia.</u>

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While calculating the very high risk area to see if the risk meets the threshold level, we need to consider there's very small provinces Orkhon, Darhan-Uul, Govi-Sumber in Mongolia and those provinces have high chance of being covered with red (very high risk) completely. To avoid triggering every year, when we calculate the very high risk areas, we will calculate as merging Orhon and Darkhan-Uul into Selenge province, Gobisumber into Dundgobi. Ulaanbaatar the capital city of Mongolia wouldn't be targeted area because it's an urban settlement with very little amount of livestock in it.

The threshold of 20% coverage of the highest risk level over no less than 3 provinces (with exceptions for very small provinces outlined above) is a best estimate for triggering with a return period near 1-in-5 years, although the rigor of this analysis is limited by factors discussed previously. The high density threshold will be re-assessed in later years once there are a greater number of outputs of the Dzud Risk Map to analyse. Additional analysis will also be completed through 2019 via a capacity building fellowship at Nagoya University. If this analysis gives an indication of a high density threshold to better mirror the return period of a 1-in-5-year disaster event, the EAP may be revised in subsequent years and re-submitted to the validation committee.

Judging from the activation in 2019-2020, the trigger methodology is working well enough to continue using it but there's still needs to collect more historical data and do research to improve it. Currently, there are more initiatives coming from Climate Centre to increasing spatial resolution and quality of temperature observations which is in the process of analysis. When there's new methodology or tools to improvement made to trigger methodology, the EAP will be updated and re-submitted.

4.1C Forecast basis for trigger

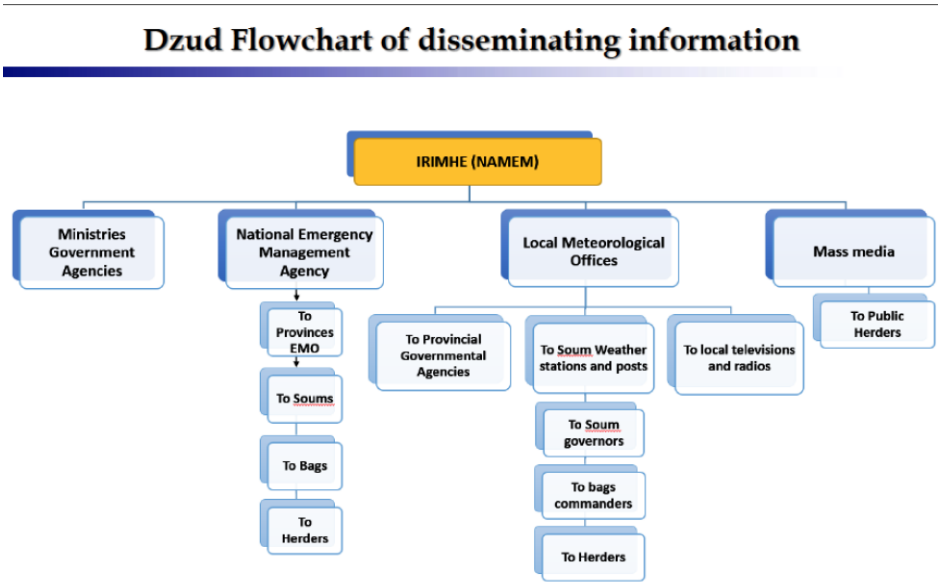
The menu of forecasts for dzud and dzud geophysical drivers are noted below. Cold temperatures and snowfall is based on different types of forecasts offered by NAMEM. The DRM is produced by NAMEM in collaboration with Nagoya University.

Methodology for forecasting impact on animals has been co-developed by Nagoya University with the government of Mongolia, called the Dzud Risk Map (Shinoda, 2017).

The DRM captures both the indicators important to animal survival going into the winter season, including condition of summer pasture, and adds to this the expected winter conditions based on a seasonal climate forecast. In doing so, the projection is an impact-based forecast of livestock death exceeding 10% of the local stock of animals. The DRM does not distinguish between the different types of dzud (white, near white, black, near black, iron), but rather considers the impact of all dzud types. The DRM, which will be released each year in November before the winter season sets in, will indicate specific localities that are at heightened risk of dzud. The forecast for risk of dzud impact (Dzud Risk Map) in the below table is the basis of the trigger. The additional forecasts outlined are stand-alone products which can be verified – the outputs of which are also integrated into the Dzud Risk Map as layers.

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Figure 14. Mapping of dissemination of the Dzud Risk Map. Source: 'Dzud Early Warning System Over Mongolia', NAMEM, 2017

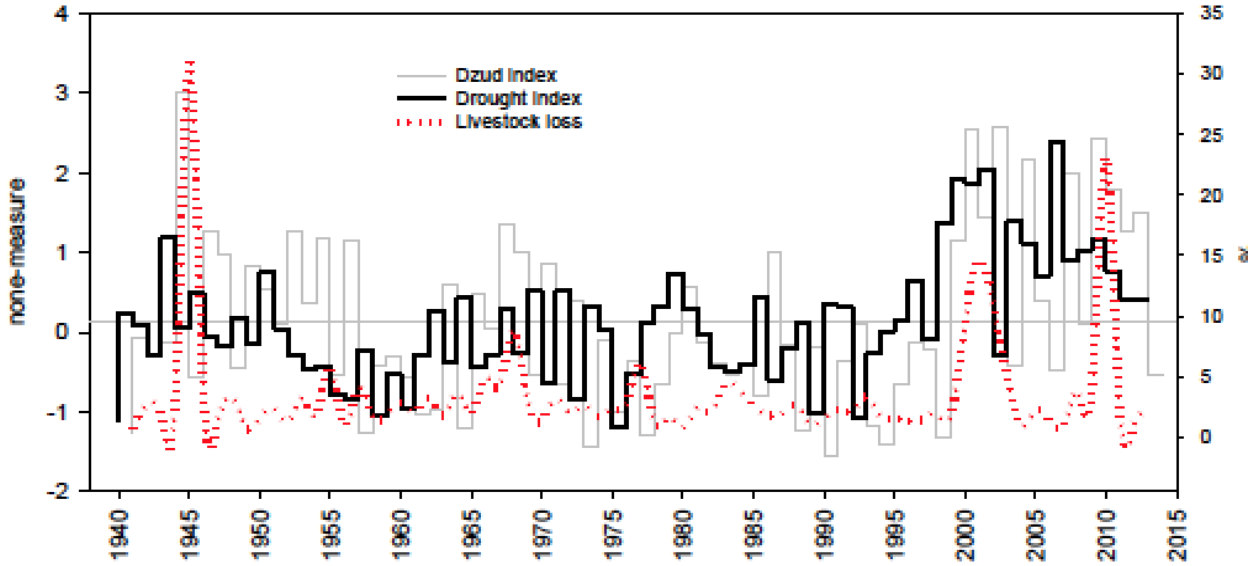


While there does not seem to be a mandate to use DRM, there are benefits with staying coordinated with other organizations regarding disaster preparedness and response activities. Further, other humanitarian, development and UN agencies have taken the lead of MRCS and FAO and are now using the DRM to guide activities including World Vision and Save the Children. As more actors become interested in early action, it will be important to coordinate activities (including organizing working group on forecast based actors, avoid from duplicated effort etc.) to reach those in need timely and more efficiently.

Although it is unclear if it is derived using the same process as the dzud risk map, the dzud index, since 1940, seems to have some relationship with spikes in livestock loss (Figure 7). From the chart it seems that the frequency of reaching high levels of the dzud index is increasing, with an especially sharp increase since 2000.

Figure 15. 1940-2015 plot of dzud index, drought index and livestock loss

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Source: Meteorological Alert System in NMS of Mongolia, NAMEM, 2017

4.2 Exposure Map

Based on our historical impact analysis, the elements most exposed to dzud are the herder households' livelihoods and their livestock. Mortality of livestock due to dzud is the exposed element and the livelihoods of vulnerable herder households who are residing in dzud-high-risk area are the most exposed to dzud. The following figure is the DRM produced for the 2017/2018 season in which we triggered for the first time. Non-herder households are not as directly exposed to dzud because they do not have animals.

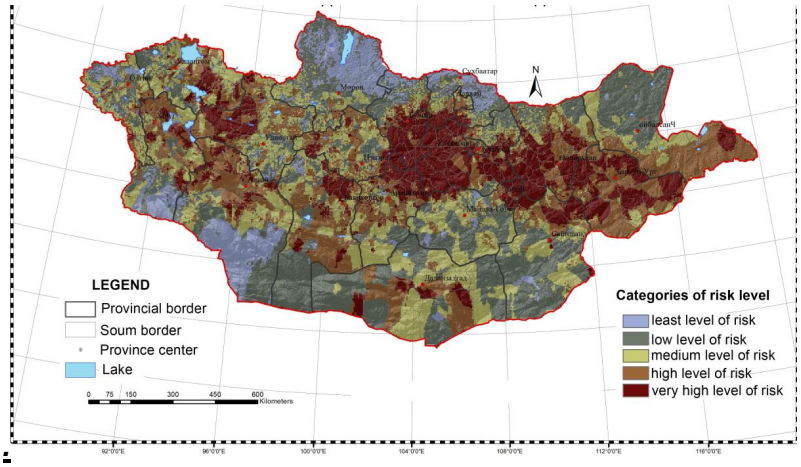


Figure 14. Dzud risk map in 2017.

4.3 Vulnerability Index

The categorization of specific herder families as uniquely vulnerable to dzud is challenging. This is in part due to the difficulty in defining a herding household, households often split for parts or all the

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year with members of the household living apart; and herders engage in multiple adaptive strategies like herd splitting via kinship networks whereby a portion of their animals are temporarily under the care of others while they simultaneously care for portions of herds belonging to others. This complicates having an accurate count of the number of animals owned by a herding household and understanding which households continue to rely primarily on herding and as such are considered 'active herders', and which now have mixed livelihoods or are primarily caring for the animals of others who are no longer engaged in the day-to-day activities of herding.

Ranking households with particular characteristics as more vulnerable than other households includes some normative decision making. One could argue that the most vulnerable to dzud are the householders with very large herds, as they have more to lose, their herds are highly linked to the well-being of the broader economy, and they are most likely to be relying solely on herding as their sole income generating activity. In contrast, one could argue the households that are most vulnerable to dzud are those with the fewest animals, as they are closer or are already beyond the lower limit of the number of animals on which a family could subsist. Those households are at greatest risk of losing all their animals with no ability to re-stock or gain access to credit, and as such may need to make a destitution migration to an urban area to live in informal settlements – a situation which is associated with poor psychosocial well-being, high rates of ill-health, domestic violence and poverty and few which Government supports thus the households with small herds (up to 400 livestock), with additional socio-economic vulnerability criteria, will be targeted. This is because vulnerability of the household is greatly influenced by socio-economic indicators such as disability, single-parenting, and having multiple children of school age etc. Exposed communities are identified according to the Dzud Risk Map. Vulnerable households within the exposed communities are selected according to the vulnerability criteria. This process is completed by the local relative Red Cross branch, Local emergency management agency and the communities' legal representative. Household vulnerability criteria includes the following:

- Household must be an active herder household (who herd livestock by themselves) and have up to 400 livestock.

And meet at least one of the following criteria

- Be single headed household with 3 or more children under 16;
- Household with disabled member;
- Household with lactating or pregnant woman;
- Senior herder (older than 60) who herd his livestock by himself;
- Household with 5 or more children under 16. For the rationale of the selecting criteria, go to Vulnerability Analysis section on page 14 or please, click here.

4.4 Definition of the Impact Level

The Dzud Risk Map indicates the following categories of risk: very high, high, medium, low, and very low.

Due to coarse data, it is challenging to validate each category. The current danger level seems to be 'medium and above' as that is what the DRM developers communicate was one of the thresholds they used for verification of the accuracy of the DRM. As such, the producers of the DRM would suggest action to be taken when the map indicates medium, high or very high. This, however, is not suitable for the FbA by DREF. In recognition of this, we have outlined additional calculations to be done as the basis of the FbA by DREF trigger, as outlined in the previous section. This involves calculating the percentage of each province that is categorized as each risk level, followed by an

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assessment as to whether the risk level meet or surpass the threshold defined for the FbF trigger (20% or more in 3 or more provinces).

In the table below, we can see that historically speaking, dzud has had large impact on livestock loss in the following years:

Year	1945	1950	1968	2000	2001	2002	2010
Livestock loss	8.1 mil	4 mil	2.7 mil	3.5 mil	4.8 mil	2.9 mil	10.3 mil

Figure 15. Interannual changes in numbers and mortality of livestock and dzud index for Mongolia.

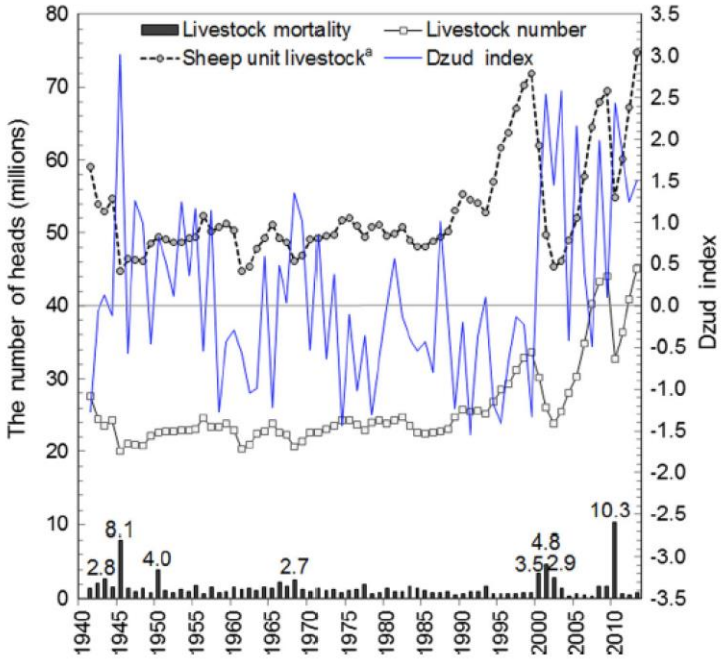


Fig. 2 Interannual changes in numbers and mortality of livestock and *dzud* index for Mongolia [Data sources for 1941–1994 from the National Statistical Office of Mongolia and for 1995–2013 from the Mongolian Statistical Yearbook during 1999 and 2013 (NSO 2000–2014)]. [a]Sheep unit livestock values are: 1 camel = 5 sheep, 1 horse = 7 sheep, 1 cattle = 6 sheep, 1 goat = 0.9 sheep (NSO 2014)

Du, C., Shinoda, M., Tachiiri, K., Nandintsetseg, B., Komiyama, H., & Matsushita, S. (2017). Mongolian herders' vulnerability to dzud: a study of record livestock mortality levels during the severe 2009/2010 winter. *Natural Hazards*, 1-15.

4.5 Justification of the Impact Level

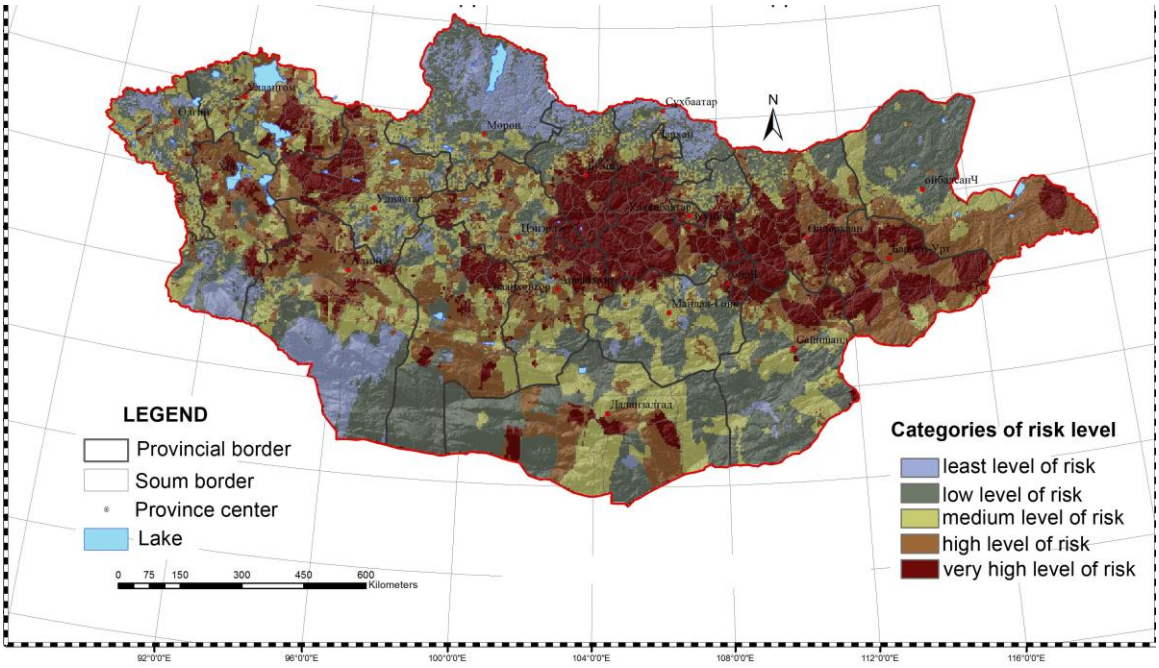
There is significant socioeconomic impact from dzud, however at what magnitude within the forecast should action be taken remains a complex challenge. One of the main challenges to this is the lack of data, on both the forecast side and impact side, to draw any concrete conclusion about the impact level. The threshold for action that has been outlined in the trigger section is based on an analysis of

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the few years for which we have data and is a best-estimate of how to target years that are beyond the coping capacity of the herder population and provincial government actors to protect herder livelihoods from substantial losses.

4.6 Intervention Map

In the context of the dzud risk map, the intervention map is captured in the process.



The picture above is dzud risk map published on Nov 30 2017 and MRCS targeted 2000 households in 40 soums across 12 provinces with very high risk area. The target area must have very high risk of dzud and Red Cross branch in the province must have capable of running cash operation.

5. Selection of Actions

5.1 Prioritized impacts

In the event of dzud, the reduction of livestock mortality and securing the well-being of the herder families (mental and physical health, food security) are the prioritized impacts. The herder households with limited manpower and resources such as single-parented household, seniors with no guardian, household with disabled member, households with 5 or more children under 16 who are living in the high-risk of dzud (red areas) are the most vulnerable to dzud and MRCS will distribute animal care kits to the herder households to prevent them from losing their livelihood as the livestock needs a proper treatment such as vitamin supplement and minerals to survive the harsh winter. Also unconditional cash of 240’000 MNT (equal to 91 USD which is the minimum monthly wage in Mongolia) which has been agreed by all humanitarian actors in the country will be distributed to support the vulnerable herder households to meet their essential needs (hay, fodder, warm clothes, medicine) for dzud as means to increase their coping capacity against dzud and reduce the affection.

5.2 Summary of selection process

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As we're primarily aiming to reduce the livestock mortality, we have consulted with livestock experts and herder communities, plus members of humanitarian country team to choose the early actions. We're advised by the livestock experts to include the essential items (vitamin supplement, minerals, fish oil, hoof oil, eye ointment) in the kit which will recover the exhausted livestock as the livestock are enervated from surviving the coldness and hay and fodder doesn't necessarily bring back its vital energy. Animal care kits for 1'800 households (each household receives the same size of animal care kit since they are households with up to 400 livestock which means their herd size couldn't significantly differ) can be procured and transported to the beneficiaries within a month and all the contents have instructions in Mongolian enabling the beneficiaries to use the contents with no difficulty.

Unconditional cash grant is distributed to the herder households to meet their specific needs to overcome dzud with reduced affection. The herder households with limited resources and manpower struggle to prepare hay and even when they have prepared hay bales it's impossible to prepare enough amount to feed their livestock until the grass starts growing. With unconditional cash assistance, the herder households are available to meet their variety of needs such as hay, fodder, warm clothes, medicine etc. Field research on availability of hay and fodder to herders was conducted through RC branches and starting from November to March, the hay suppliers provide hay bales and fodders from eastern provinces of Mongolia, northern villages of Russia to the other provinces. On the other hand, if there's a sign of extreme winter conditions or the situation comes close to emergency level, the state fund of hay and fodder will be allocated to the provinces to be sold at half-price. It's confident to state that the hay and fodder will be available, if the herders have cash.

Table 7. ToC

Theory of Change					
Risk	**Action**	**Outputs**	**Short term outcomes**	**Long term outcomes**	**Available capacities to implement this action**
Pre-winter season with dry conditions followed by an extreme cold and snowfall can decimate their livestock which is the main source of income and food for herder households.	Distribution of animal care kits to protect and increase the recovery of sick animals.	The herder household is available to recover their sick animal or prevent their livestock form getting sick with animal care kit contents.	Reduction of livestock mortality by protecting and recovering them adequately.	Families lose less than 10% of their herds in the event of extreme frost and snowfall.	Previous contact with animal care kits' content producers
The vulnerable households have limited coping capacity to deal with the impacts of	Distribution of cash grant to cover for specific needs (hay, fodder, medicine	Specific needs of vulnerable herder households are met.	The vulnerable herder households' capacity to overcome hardship of	The livelihoods of the vulnerable herder households are secured.	Agreement with Khan Bank, previous experience in cash based intervention,

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dzud due to limited resources.	etc.) of the vulnerable household.		severe winter is increased.	A mechanism established in which the vulnerable herders are assisted before the disaster, preventing them from losing their livelihoods.	functional market, feasibility of cash based intervention

5.3 Usefulness of actions in case of non-occurring event

As MRCS will be working with the stakeholders who were part of FbF operation in 2017, the stakeholders are aware of risk that the event may not happen. All the herder families and their livestock experience the frigid, continental winter of Mongolia and every livestock somehow loses its energy due to decreased nutrition and amount of energy thus the distribution of animal care kits will never turn out to be in vain. Unconditional cash grant could also be utilized by any herder households as it can cover for their variety of needs.

5.4 Evidence Base

The impact analysis survey was conducted by National University of Life Sciences and Agriculture among 223 FbF beneficiary and 223 non-beneficiaries after FbF project implemented in 2017. From the results of the survey, the herder households who received cash assistance had spent most of the cash to buy hay and fodder for their livestock and also considerable amount had been spent for food. The cash assistance was distributed in December and the animal care kits in January, considering the peak of livestock death is February to April, with cash assistance and care kits made the herders available to feed their exhausted or weak livestock.

Table 8. Mean spending of cash of aid, by percent

№	Spending	Tuv province	Zavkhan Province	Khentii province	Uvs province	Total
1	Hay and fodder	81.2	**68.4**	**66.2**	**88.0**	**76.0**
2	Animal care	0.52		0.51		0.26
3	Livestock		1.30			0.32
4	Veterinary treatment	0.12	2.69	0.28		0.77
5	Food consumption	12.70	**16.30**	**13.45**	**4.80**	**11.81**

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6	Domestic gadgets		1.25	1.30		0.64
7	Health care	0.87	1.81	5.14	0.51	2.08
8	Children's education	0.31		4.17	0.38	1.21
9	Loan payment				0.76	0.19
10	Others	4.0	8.2	7.9	5.6	6.41
Cash aid spending		**99.7**	**100.0**	**98.9**	**100.0**	**99.7**

It should be noted that both groups had similar characteristics such as number of livestock, number of famility members, age of household head etc.

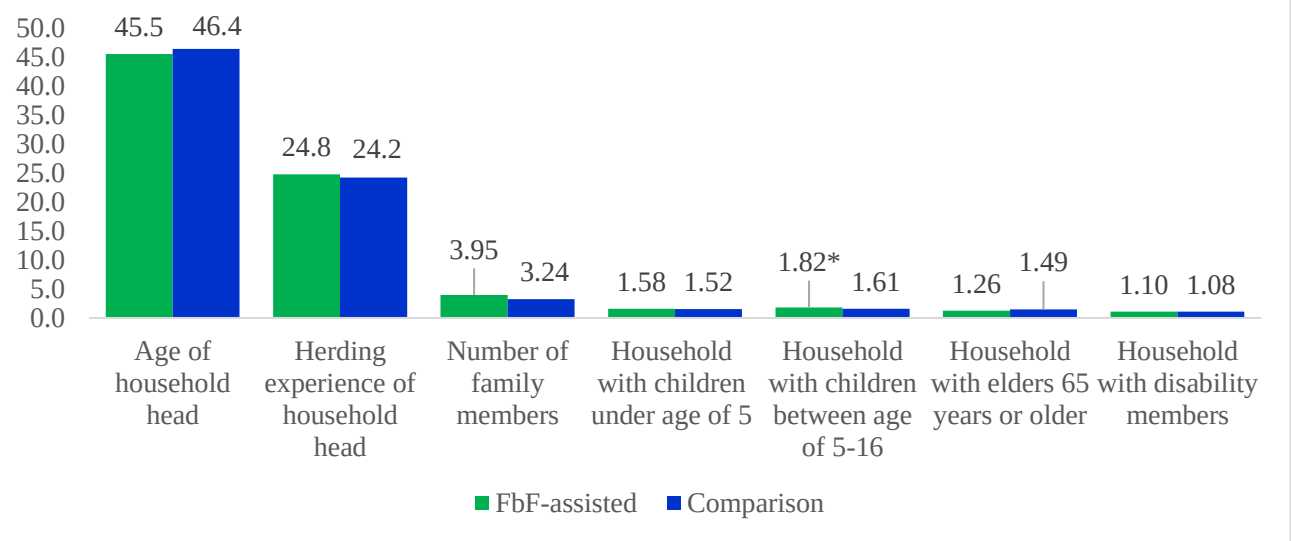


Figure 16.General information of households compared in the analysis.

It's seen in the table below that the herder households who received FbF assistance had less livestock and offspring loss than non-beneficiaries (Table. 5).

Table 9. The monetary value of loss of adult animal and offspring per household, 000 MNT.

Types of losses	FbF-assisted	Comparison	Difference	t-statistics (p-values)
Loss of adult animals	2,678.6	2,972.9	**-294.3**	-0.72 (0.47)
Loss of offspring	577.0	661.1	**-84.1**	-1.14 (0.26)
Total loss	**2,960.8**	**3,267.5**	**-306.7**	**-0.73 (0.47)**

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5.5 Beneficiary selection process and criteria

Vulnerable communities within the exposed areas are identified according to the vulnerability criteria and will be selected with the local Red Cross branch, Local emergency management agency and the communities' legal representative. Vulnerability criteria includes the following:

- Household must be an active herder household (who herd livestock by themselves) and have up to 400 livestock

And meet at least one of the following criteria:

- Be single headed household with 3 or more children under 16;
- Household with disabled member;
- Household with lactating or pregnant woman;
- Senior herder (older than 60) who herd his livestock by himself;
- Household with 5 or more children under 16.

5.6 Feasibility

In the framework of the FbF project which was implemented by MRCS in 2017 with support from British Red Cross, MRCS distributed animal care kits and unconditional cash grants to 2'000 herder households in 40 soums across 12 provinces in a timely manner. Animal care kits will be procured from the suppliers according to the pre-disaster agreement in a week and can be distributed to the beneficiaries in the following week. MRCS has previous contacts with entities and individuals regarding the animal care kits' content producers and transportation companies from the previous projects which will help the process to go even faster.

MRCS has a signed contract with financial service provider, Khan Bank which has its branches in the smallest administrative unit in Mongolia makes us available to provide cash assistance to the herder population. Once the herders have their cash, they're able to purchase the items specific to their needs. In most cases, the herder population spend their cash assistance on hay and fodder, medicine and the market for hay and fodder is mobile in Mongolia in which hay trucks visit provinces/soums to sell their hay and fodder which enabling the herders to buy hay. For other materials, soum and province markets usually build their stock according to the needs of the herder population because they are the main customers. Plus, any changes with the market or beneficiary needs is observed and monitored by the Red Cross primary-level branch in soums.

MRCS used cash in emergencies toolkit to assess whether cash transferring was feasible or not even though cash transfer program had been used in previous operations. Using the cash feasibility checklist, we have found the results were affirmative that cash was feasible.

Table 10. Is cash feasible checklist?

Criteria	Key considerations	Yes	No	Comments
NEEDS to be met by intervention	Can the needs be met through specific commodities and/or services?	X		The hay and fodder which are essential needs of the herders could be purchased locally.
FUNDING	Is CTP within donors' funding policies and framework?	X		There's no regulation against CTP within IFRC funding policy.

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GOVERNMENT policies	Is CTP in accordance with local government policies? *Ensure that there is no prohibition.*	X		Mongolian government has no prohibition against cash transfers because CTP is relevantly new to Mongolia and respective legal base has not been established yet.
MARKET	Is the economy monetized and are people used to handling money?	X		Mongolian economy is monetized and uses own currency. The people (herders) are used to handling money.
	Does the population usually use markets to access its needs?	X		The herders usually go to soum center to purchase hay and fodder.
	Are markets accessible after the emergency?	X		Dzud only affects the pastoral nomads who tend their livestock in an open grassland and doesn't really have big impact on those who are settled in urban area this the markets are still accessible during or after the event.
	Are needed items available in sufficient quantity and at acceptable prices in the local markets?			The supply chain for hay and fodder the main needs of the herders seem to be strong throughout the country as it's developed into a business chain because of hard winters of Mongolia required a tons of bales each year. The price of hay and fodder seem to be depending on the summer conditions, if the summer had low vegetation, the price goes up.
	Are traders able and willing to adapt to an increased demand? *Consider transportation, stocking, quality and quantity issues.*	X		If a certain location has more demand than the supply, it's easily solved by an alternative supplier from other provinces next to it.
	Are prices likely to remain stable in the coming weeks/months?	X		Mongolian economy is not big that prices don't fluctuate significantly, the soum markets (being the smallest) have even more stable prices.

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ORGANIZATIONAL CAPACITY	Does the agency have the internal capacity (programmatic, financial, logistics) to implement a CTP intervention? *Consider previous experience and potential partnerships.*	X		MRCS has an agreement with Khan Bank to run CTP when disaster hits. MRCS has been implementing CTP for last 4 years. According to the contract with Khan Bank, MRCS is obliged to provide clean beneficiary list and confirm the transaction thus the whole process doesn't require much human resource or capability.
BENEFICIARY PREFERENCES	Is CTP a preferred option for the beneficiaries? *Consider empowerment, dignity issues and beneficiary capacity to deal with technology (mobiles, cards, etc.).*	X		Mongolian herders are familiar using Khan Bank account as its branch is accessible from local level and cash assistance is directly transferred to their private bank account thus the beneficiary should have no issue with the assistance.
INFRASTRUCTURE AND SERVICES	Are the infrastructure and services needed to transfer cash to beneficiaries available? *Consider financial and technology requirements (banks, microfinance institutions, mobile phone coverage, etc.).*	X		The Khan Bank (FSP) has its branches in the smallest administrative units in Mongolia enabling beneficiaries to receive cash assistance.
RISKS	Are the risks associated with CTP acceptable or possible to mitigate? *Consider beneficiary and staff security, as well corruption issues.*	X		Any fraud or beneficiary complaints are registered through complaint hotline. Distributions are held under monitoring and coordination by RC branch officer and volunteers while local emergency officers provide security.
TIMELINESS	Is it possible to set up and implement a CTP with the necessary speed and at the intended scale? *Consider the time that might be required to roll out the different delivery mechanisms.*	X		It wouldn't take much time to set up CTP as we have an agreement with CTP, MRCS was able to deliver cash assistance to 2000 households within a month.

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6. Monitoring, Evaluation, Accountability and Learning

MRCS NDRT team members will monitor the implementation of the FBF project (including post distribution monitoring on cash and animal care kits) in the field with support from PMER members. PMER and finance units at all levels will follow up on regular reporting requirements.

A special telephone line and complaint desk will be established at MRCS headquarters and NDRT members will receive complaints directly and resolve the issues from HQ. The telephone number will be communicated to beneficiaries through beneficiary certification which is distributed during the cash distribution. Branch volunteers will monitor the distribution of the animal care kits in targeted provinces. Outside banners which has hotline number and brief introduction to the aid on it will be placed during the cash and items' distribution ensuring non-beneficiaries are able to communicate with us and get the information they need.

6.1 Monitoring the EAP implementation

Performance and monitoring during deployment - MRCS

a) Immediate solutions.
b) Report of gaps, bottlenecks, critical points.

Responsible: MRCS DMPM

MRCS DMPM will monitor the performance of the deployment. For this purpose, during the deployment, in addition to a logistics committee, a coordination committee will also be established.

6.2 Trigger Evaluation

After each trigger activation, the trigger activation will be evaluated with support from Climate Centre, NAMEM and the findings will be shared with the stakeholders for the following questions:

(1) Did we learn something new about the elements that form the basis of the trigger? (Is one of the elements different from what it was when triggers were initially defined? Has anything changed about the datasets we use that requires a review of triggers?); (2) Do we know more about the accuracy of the models used? (How did the forecast for risk of dzud impact compare to the actual impact from risk? Are the forecast models used still the best available?); (3) Were the probabilities and impact levels of the original trigger appropriate? This evaluation process will guarantee a continuous learning and improvement of the system.

The cost benefit analysis for 1st EAP activation for 2019/2020 winter is currently being conducted by third party organization. Within the range of analysis, 750 households (200 EAP beneficiaries, 200 post-dzud beneficiaries, 200 non-beneficiaries and FAO early action beneficiaries) are taken surveys for comparative analysis. As soon as the results are available it will be introduced to relevant stakeholders.

6.3 Evaluation of impact of early actions after activation

After FBF project, impact analysis survey will be conducted as it's been done after the previous FBF project. Impact analysis survey will reach at least 10% of the total beneficiaries and compare them with non-beneficiaries. The survey results will be shared with all the stakeholders.

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6.4 Identification and Documentation of Lessons Learned

After implementation of FBF project, MRCS will conduct cost-benefit analysis to determine the project efficiency and overall results will be collected out of post-distribution monitoring. The cost benefit analysis will be organized by Disaster management team and PMER team of Mongolian Red Cross Society working with third-party research organization. The results of the analysis will be introduced by respective RC mid-level branches, NAMEM, NEMA.

7. National Society Early Action Capacity

MRCS has previous experience of FbA project for dzud in which MRCS reached 2'000 herder households with relief items of animal care kits and cash assistance in a timely manner. MRCS operated 8 DREF and EAs for dzud and flash floods, hand, foot and mouth disease successfully in the last 10 years.[20]

7.1 HR and General Capacity

Mongolian Red Cross Society (MRCS) has 33 mid-level branches, existent in all provinces and districts as well as is a sole National Humanitarian Organization in Mongolia. Under the newly adopted Law on the Legal Status of the MRCS passed by the Mongolian Parliament in late 2015 and approved by the President of the country in January 2016, the MRCS is an auxiliary to the government in humanitarian matters with a distinct recognized role in disasters and emergencies as stated in the Disaster Protection Law of Mongolia.

The MRCS is a member of the National Emergency Commission and the Humanitarian Country Team who actively involves in the planning and designing of the national response to the emerging crisis. The MRCS's response conduct in close cooperation with NEMA and other HCT members. MRCS has previous experience from response to Dzud with capacity strengthened through development and adopting response mechanisms such as cash-based interventions, and building stronger partnerships and establishing strong ties with relevant service providers.

MRCS conducted OCAC (Organization Capacity Assessment and Certification) in 2014, 2016, 2018 and there have been significant improvements in the various organizational sectors of MRCS. In 2016, MRCS had 40% weakness and 60% strength and from the results of OCAC in 2018 MRCS had 20% weakness and 80% strength. The table below shows the B attributes [21]from OCAC. As the results from OCAC 2018, MRCS had no A attributes, 19 B attributes, 24 C attributes, 34 D attributes and 13 E attributes.

Table 11. OCAC 2018 Attributes of MRCS

			2016	**2018**
To exist	14	Reputational risk management	B	B
To organize	16	Working conditions	B	B
	17	Staffing structure	B	B

[20] http://www.ifrc.org/en/publications-and-reports/appeals/?ac=&at=241&c=&co=SP354MN&dt=1&f=&re=&t=&ti=&zo=
[21] In OCAC exercise, A, B, C, D, and E attributes are used - with C serving as benchmark, A being the lowest and E, the highest.

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	21	Job satisfaction	B	B
	22	Staff compensation	B	B
	26	Security/ Safety Management	B	B
	27	Security/Safety Training	A	B
	28	Security/Safety culture	B	B
	30	Buildings	B	B
	31	Fleet	A	B
	36	Fleet management	A	B
	49	Insurance	A	B
To relate and mobilize	69	Communications during emergencies	B	B
	75	Unrestricted funding over core budget	A	B
	77	Unrestricted reserves	B	B
	78	Business continuity	A	B
	79	Unrestricted working capital	A	B
	81	Unrestricted fund mobilization	B	B
To grow	89	Evaluations	C	B

7.2 Thematic capacity

Cash based Intervention – MRCS has been implementing cash-based interventions for last 3 years in which it reached almost 10'000 vulnerable households. MRCS has a contract with Khan Bank which has its branches in almost every soum across Mongolia. Mongolian Red Cross is increasing its cash-based intervention capacity by training more staff in the area and 5 people were trained in Asia Pacific Practical Emergency Cash Training (PECT), 1 person trained in Cash Information management and technology training. Each mid-level branch has at least 1 person who completed "Introduction to Cash Transfer Programming" online training. MRCS and it branches are capable to deliver cash assistance for 1'500 households in a month or less by experience.

Animal care kits – The logistics team collects price offers from the entities who are able to provide the contents of the animal care kits and the commission established for the animal care kit contents' procurement (the members include the logistics, finance and disaster management team members) will choose the providers according to the appropriate financial regulations. MRCS has previous contacts with the respective entities and individuals who produce the animal care kit contents which helps the process to move ahead more smoothly. The logistics team has pre-agreement with the transportation companies as the destinations are uncertain. MRCS delivered the animal care kits for 2'000 vulnerable households within a month in 2017.

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7.3 Strategies and plans

One of the strategic aims MRCS has in its Strategy 2020 is to build capacity on prevention, preparedness and recovery activities to save lives and livelihoods of people during disasters and in emergencies. MRCS aims to utilize climate information for its early warning – early action to reach the most vulnerable before disaster strikes.

Through FBF project, National Society's strategy is to strengthen its branches for better skills of analyzing climate information, volunteer mobilization. National Society has implemented FBF pilot-project funded by BRC in 2017 reaching 2000 vulnerable households in 12 provinces out of 21 and MRCS aims to improve its FBF mechanism through cooperation with IFRC, Climate Centre.

7.4 Financial capacity to advance funds

For the actions of the National Society and the branches of the MRCS, only basic expenses are covered, which is why they are not yet able to provide funds in advance.

In the protocol's activation mechanism, the expenses are detailed in the explanation of the preparation and activation budget in point 8, considering that the amounts cannot be financed by the National Society or the region's branches at this time.

8. Finance and Logistics

8.1 Budget

The EAP budget is attached. It contains disaggregated information by pre-positioning, readiness And activation (annex 1). Funding to transferred to NS account through BJ CCST.

8.2 Readiness cost

Readiness cost includes funding for an annual refresher training for branch response teams and an annual workshop with stakeholders ensuring MRCS is ready anytime to take an action.

8.3 Activation cost

Activation costs include all costs associated with the activation of the EAP once the trigger has been reached. The budget includes costs for volunteer incentives, and unconditional cash grants, animal care kits' transportation cost. It was decided that the animal care kits are directly purchased from the distributers who MRCS signed pre-disaster agreements with, once the trigger is activated in order to ensure that the animal care kits are available on time since transportation of animal care kits could delay due to poor quality of roads to provinces.

8.4 Prepositioning

MRCS will sign pre-disaster agreements with suppliers of animal care kit contents (fish oil, mineral blocks, vitamin supplement, hoof oil, eye ointment) since there's insufficient number of suppliers for each item in Mongolia (for example: there's only 1 company which produces mineral blocks and also only one company which owns the legal patent and rights to produce vitamin supplement, hoof oil,

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eye ointment, there's no manufacturer for fish oil in Mongolia thus it's only imported), having pre-disaster agreement with the suppliers will allow us to save enormous amount of time and help ensuring rapid transportation and distribution.
By signing pre-agreements with the suppliers, MRCS will be able to avoid having to announce bid for enclosed price offers, instead all the items will be procured directly from the respective companies and producers according to the pre-disaster agreement.

9. EAP Activation Process

9.1 Preparatory measures

Preparatory measure	Responsible person
Pre-agreement made with financial service provider (Khan Bank)	Logistics officer, Cash focal point
Pre-agreement made with transportation companies	Logistics officer
Pre-agreements made with animal care kit contents' distributors	Logistics officer
Warehouse for relief items is ready	Logistics officer, Stock manager

9.2 Communication protocol

Go to end of the document for Command chain.

9.3 Stop Mechanism

Dzud risk map is updated and published by NAMEM once the weather conditions are changed. If the dzud risk map is updated and the risk level doesn't reach the trigger activation threshold, the animal care kits could be stored in the warehouse until next activation. What makes it difficult to have stop mechanism work in our context is in order to process cash transfers, we need to collect basic and bank information from the beneficiaries and have them checked by financial service provider as our beneficiary data must be the same as how it's in the financial service provider database which makes us unable to collect information without letting the beneficiaries give message that they are going to be assisted.

9.4 Trigger activation system

MRCS has close relationship with National Agency for Meteorology and Environment Monitoring and NAMEM will be providing us with most recent updates of forecast information on DRM. Once the dzud risk map is developed and if there's 3 or more provinces with 20% or more percentage of areas with very high risk of dzud and RC branch in responsible areas are capable of running the operation, the trigger is activated.

9.5 Implementation process

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Potential trigger	Dzud risk map released and/or updated regularly				Responsible person or entity	Where
Week 0					NAMEM, MRCS	NAMEM, MRCS-HQ
Week 1	Identify provinces and soums for intervention based on map, coordinate with other actors on areas of operation (avoid overlap); confirm willingness and capacity of relevant local MRCS branches to implement immediately.				MRCS, NAMEM, NEMA, RC Mid-level branches	MRCS-HQ, RC branch
Week 2 Week 3	Procurement for veterinary kits for households through MRCS tendering process.	Local MRCS branch(s) produce beneficiary lists according to vulnerability criteria and validate bank accounts			MRCS, RC mid-level branches, Respective local authorities, communities, financial service provider	MRCS-HQ, RC branch
Week 4			Transport vet kits to local branches for distribution	Complete cash transfer to HHs	MRCS, RC branch, Khan bank	MRCS-HQ, RC branch
Week 5				Respective mid-level branch staff and volunteers distribute the kits to the beneficiaries.	MRCS, RC branch, NEMA	RC branch

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10. EAP endorsement

As MRCS aims to reduce disaster risk reduction in most efficient and effective way possible in its strategic priority, the EAP is strongly endorsed by the Secretary General of Mongolian Red Cross Society, Madam Bolormaa Nordov. The EAP was introduced to the governing board and highly endorsed by the Governing board members of MRCS and State-Red Cross cooperation council. The new EAP for dzud has been introduced to the main stakeholders such as NEMA, NAMEM and other humanitarian actors in the country at Humanitarian country team meeting in Mongolia. Although NEMA and NAMEM have previous experience in implementing FbA project with MRCS, the EAP was introduced and their inputs were collected for the further development of the EAP. There's no official working group for FbA but there's other organizations who are using FbA in disaster risk reduction such as United Nations Food and Agricultural Organization. FbA and use of DRM to reduce dzud risk are highly endorsed by NEMA, NAMEM who are our key stakeholders.

11. Conclusion

FbA by the DREF is an innovative approach to reduce disaster risk at global level through multi-collaboration between entities. FBF mechanism is relevantly new and still needs to be developed, adapted into different scenarios. In Mongolia's case, FBF project was piloted in 2017 and MRCS aims to increase the efficiency and accuracy of the action. With validation and development of the EAP for dzud, we believe we can improve the FBF mechanism for dzud. Dzud is a slow on-set disaster which threatens livelihoods of vulnerable households by deteriorating livestock at great scale. In the previous FBF project, MRCS found out FBF could reduce the dzud risk and affection to the vulnerable households significantly according to the impact analysis and with lessons learnt from the previous project, we are able to implement and plan the project more efficiently. Our first EAP activation was successfully implemented and 1,000 vulnerable herders were assisted before the dzud impacts. Currently, the cost-benefit analysis is being conducted to assess the project efficiency and effectiveness.

The EAP ensures planned and organized operation which enables the timely and life-saving aid to the people in need in a most professional way. It brings people and organizations together and builds system to help people. The collaboration in the last activation was praised by many stakeholders. It must be noted that the government role was sufficient and essential in the implementation. MRCS was notified firstly by the Met office when dzud risk was published. Also, timely information sharing such as a list of areas that are differently labeled in terms of risk indication (low, medium, high) to analyze and identify the target areas. Even small support such as timely editable file sharing was key to smooth implementation. Beneficiary information was collected through Red Cross branches at the grass-root level and social workers provided us the information. Also, National Emergency Management Agency at provinces are partnered when selecting beneficiaries and even bringing the aid into hands of the beneficiary, roads from provincial center to soums are not paved and takes off-road cars and Emergency management vehicles and staff were huge support on this task.

MRCS notified HCT members EAP trigger is met and activated through the UN Resident Coordinator's Office and FAO used the same trigger mechanism as MRCS to provide assistance. Timely sharing of the target location and beneficiary information helped both parties to avoid duplication of effort. The early action helps us to save life during disaster by working together before disaster.

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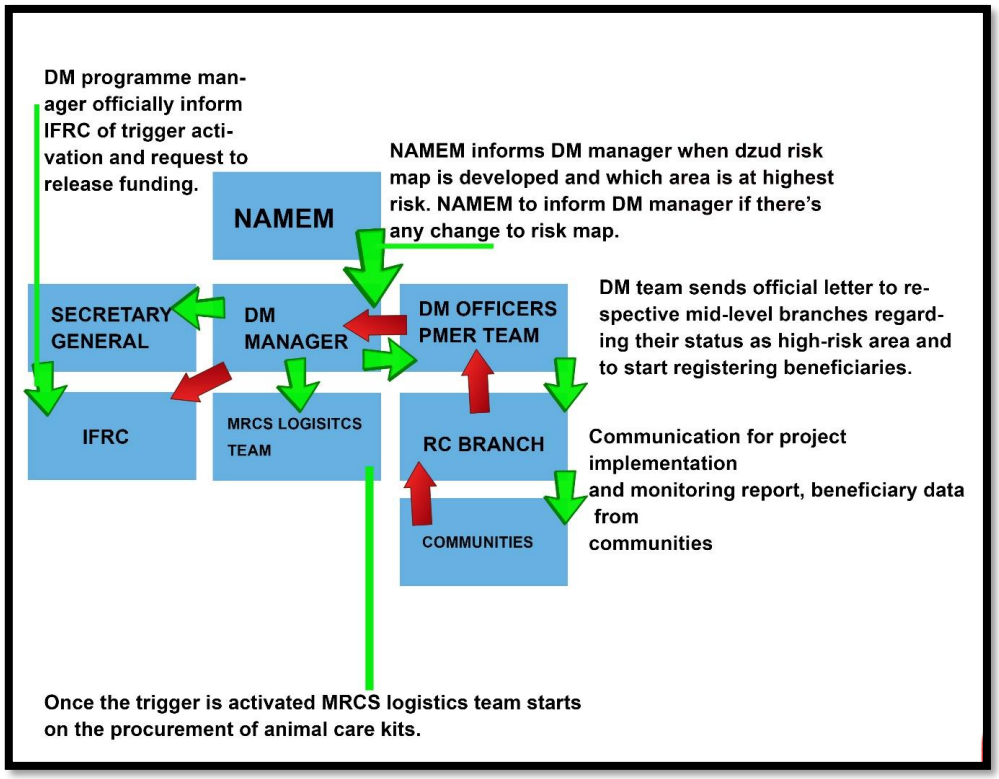
11. Annexes

1. Budget

Budget in the new FBF template is attached.

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2. Command chain



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3. Operational matrix

Intervention Sectors

General Objective: Prevent and protect 1,950 herder households that are vulnerable to the impact of dzud through pre-positioning, preparations and activation of humanitarian actions in the areas of livelihoods, cash assistance.

Priority Sectors

Livelihoods and basic needs

People targeted: 7,800 People
Male: 3,800
Female: 4,000
Requirements (CHF) 255,916

P&B Output Code	**Livelihoods and basic needs Outcome 1: Communities in very high risk areas have better resources to reduce livestock mortality.**	*2000 households have better resources to reduce the risk of losing their livelihoods.*
	Livelihoods and basic needs Output 1.1 The National Society strengthens the security of the livelihoods of the vulnerable population through activities to protect their sources of income and agricultural capital.	*Livestock nutrition kits distributed to 2000 herder households* *Unconditional cash assistance provided to 2000 herder households*
	Early action phase	**Timeframe**
AP009	Procurement and transportation of livestock nutrition kits	*1 month before the peak cold*
AP081	Unconditional cash assistance	*1 month before the peak cold*

Strategies for Implementation

P&B Output Code	**S1.1: National Society capacity building and organizational development objectives are facilitated to ensure that National Societies have the necessary legal, ethical and financial foundations, systems and structures, competences and capacities to plan and perform**	**Output indicators**
	Output S1.1.1: The National Society has effective and motivated Branch Disaster Response Team members and volunteers at local level.	• **# of BDRT members trained** • **# of volunteers involved in the operation**
	Readiness phase	**Timeframe**
AP038	Refresher training for branch response team members (annually)	*Each year before dzud risk map is published*

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	Early action phase	Timeframe
AP040	Volunteer incentive	*During the operation*
P&B Output Code	**S2.1: Effective and coordinated international disaster response is ensured** **Output S2.1: The National Society has strong collaboration with the stakeholders and ensure readiness of stakeholders for possible operation.**	**Output indicators** • **Annual workshop (during EAP lifespan) is organized involving stakeholders**
	Readiness phase	**Timeframe**
AP056	Workshop with stakeholders (annually)	*Each year before dzud risk map is published*
P&B Output Code	**S3.1: The IFRC secretariat, together with National Societies uses their unique position to influence decisions at local, national and international levels that affect the most vulnerable.** **Output S3.1.1: The National Society produces high-quality research and evaluation that informs advocacy, resource mobilization and programming.**	**Output indicators** • **# of missions on monitoring by NS or IFRC/NS Joint team** • **Lessons learnt Workshop is organized**
	Early action phase	**Timeframe**
AP063	IFRC monitoring	*During the operation*
AP066	Per diem and accommodation for NS staff	*After and during the implementation*
AP067	Fuel cost for NDRT members' trip to province for monitoring	*After and during the implementation*
AP038	Lessons learnt workshop	*After the implementation*
AP055	Beneficiary Satisfaction Survey	*After the implementation*

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